ADEMCO microtech

galaxy

16 and 16 *plus*

Engineer's Manual

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Introduction

The Galaxy 16 and 16 *plus* are versatile, technologically advanced, 8–16 zone security control panels designed for residential and smaller commercial installations.

This guide contains the information required to install, program and operate the Galaxy 16 and 16 *plus* control panels. The guide assumes that the Galaxy 16/16 *plus* control panel is fitted with software version V2.00 or above.

The Galaxy control panels default to standard functions and parameters, this means that the panels are operational on power up, however, an extensive range of functions and parameters can be modified to satisfy individual installation requirements.

The Galaxy 16 and 16 *plus* control panels are simple to install and program. Nevertheless, please read the guide carefully before using the system and retain it for future reference.

Quick Setup

To quickly set up a Galaxy 16 or 16 *plus* these simple steps should be followed.

Note: these steps should not be followed for a first time set up procedure, only those familiar with the Galaxy 16 and 16 *plus* control panels should use the quick set up procedure.

1. Connect a 1kΩ (±1%) resistor across each of the zone terminals on the Galaxy Control Panel, and the Galaxy RIO or Smart Power Supply (if fitted).
2. Ensure that the tamper reyurn loop, the terminal marked as T on the control panel PCB is chorted to 0 V at one of the terminals marked as - on the control panel PCB.
3. Connect a keypad to the line terminals on the control panel PCB. Connect the terminals as follows:

Control PCB	Galaxy Keypad
+	+
-	-
A	A
B	B

4. Connect a 680 Ω end-of-line resistor across the A abd B terminals of the Galaxy keypad.
5. Ensure that the keypad is fitted to the keypad mounting bracket: a keypad tamper occurs if the tyamper spring is not retained when the system is powered up.
6. Connect the mains wiring to the control panel - do **not** switch on the a.c. mains supply.
7. Replace te control panel enclosure lid and secure the fastening screws.
8. Turn on the a.c. mains supply.
9. The following events occur:
   - the Galaxy keypad buzzer and the control panel speaker output activate.
   - the Galaxy keypad shows ******** on the LCD display.
   - the sounders stop and the keypad display goes blank.
   - the green power LED on the Galaxy keypad illuminates.
   - the default banner is displayed on the Galaxy keypad.
10. The system is now ready to be programmed, refer to Section 5: Menu Options for details on the programming of the panel.

Section 1: SYSTEM ARCHITECTURE

Overview

The Galaxy 16 is an eight zone, seven output security control panel. All eight zones are programmable and four of the outputs are programmable, the Galaxy 16 also has non programmable Bell, Strobe and Horn outputs fitted, see System Architecture; Outputs. The Galaxy 16 can be expanded to 16 (programmable) zones and 11 outputs (eight programmable) with the addition of a Galaxy Remote Input/Output (RIO) module **or** a Galaxy Smart Power Supply Unit (Smart PSU). The Galaxy 16 also features a Line Fail zone to monitor telephone lines for use with BT RedCare. The Galaxy 16 will operate with three keypads fitted. The Galaxy 16 is also compatible with the Galaxy RS232 module and the Galaxy Printer Interface module. Figure 1.1 outlines the layout of the Galaxy 16 PCB. Figure 1.2 gives a summary of the Galaxy 16 system. The outputs of the Galaxy 16 can be used to trigger a 3 GSTU (12 V).

The Galaxy 16 *plus* has all the features of the Galaxy 16 (with the exception of the Line Fail zone) and also features an on-board dialler (telecom module) with Line Fail detection capabilities built in. The Galaxy 16 *plus* also has the ability to work with a 3 GSTU-PLI plugged onto the appropriate sockets (SK1 and SK2). Figure 1.3 outlines the layout of the Galaxy 16 *plus* PCB. Figure 1.4 gives a summary of the Galaxy 16 *plus* system.

Note: The Galaxy 16 and 16 *plus* are not compatible with the Galaxy MAX reader (in On-Line mode).

Appendix A at the back of the manual lists Galaxy 16,16 *plus* and optional, compatible module part numbers.

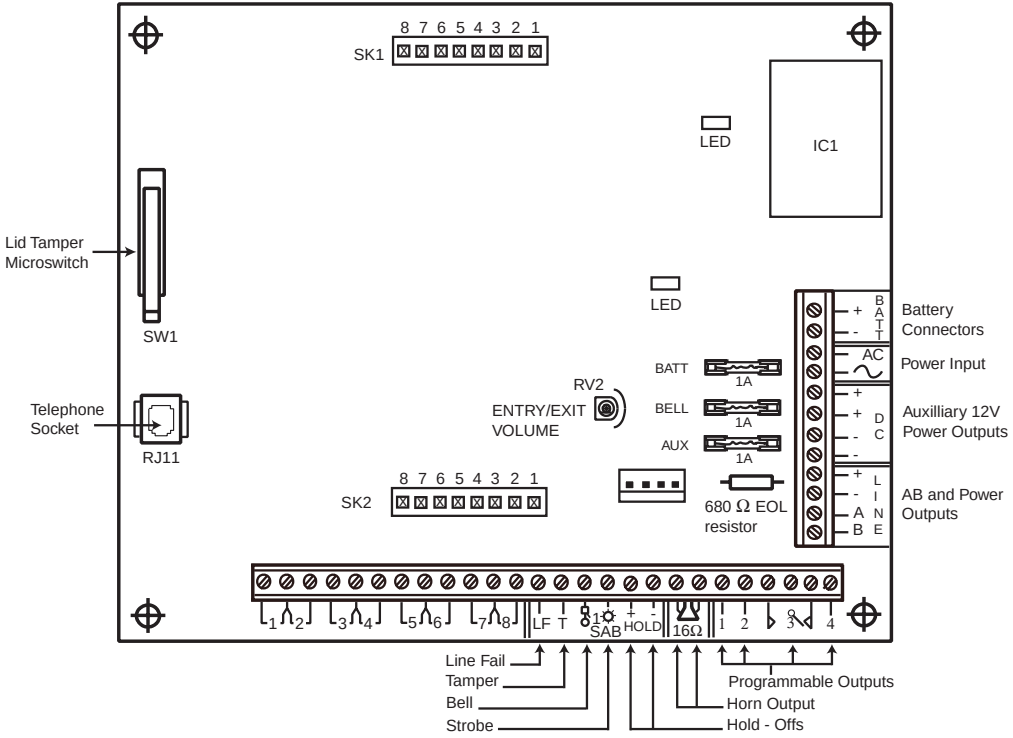


Figure 1.1 Galaxy 16 PCB Layout.

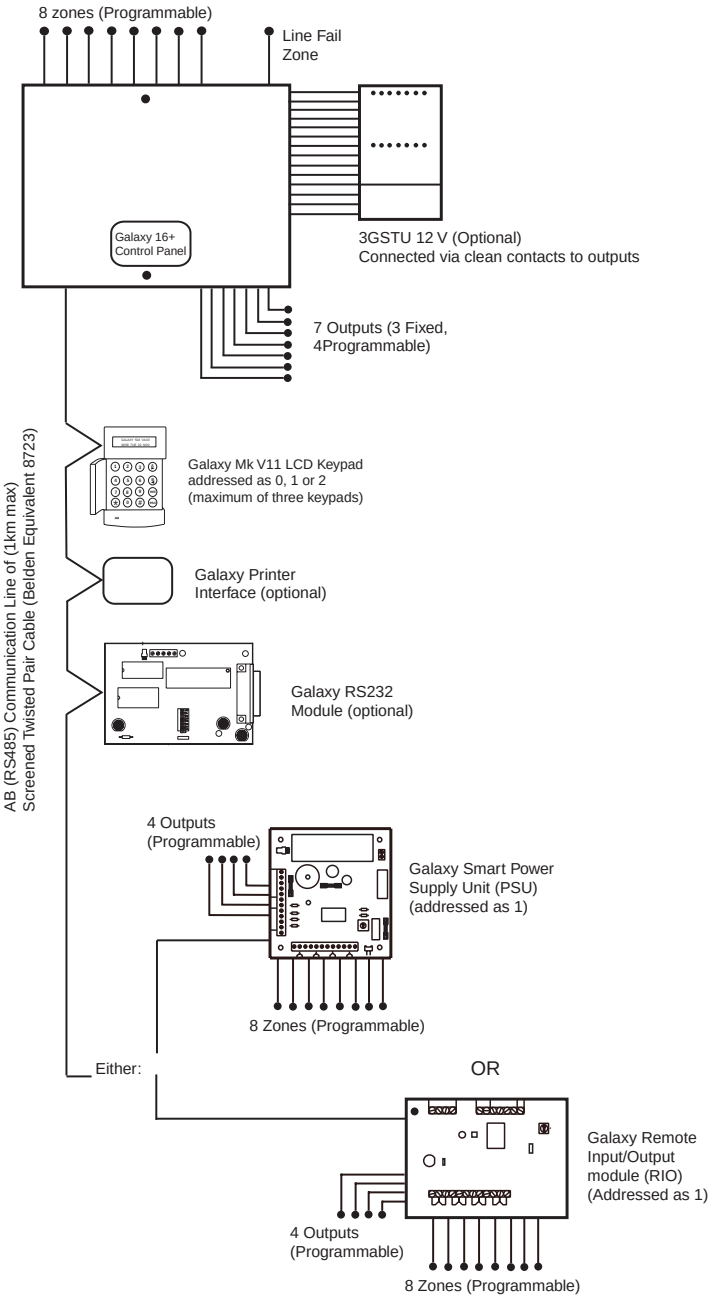

8 zones (Programmable)
Line Fail Zone
Galaxy 16+ Control Panel
3GSTU 12 V (Optional)
Connected via clean contacts to outputs
7 Outputs (3 Fixed, 4Programmable)
AB (RS485) Communication Line of (1km max)
Screened Twisted Pair Cable (Belden Equivalent 8723)
Galaxy Mk V11 LCD Keypad addressed as 0, 1 or 2 (maximum of three keypads)
Galaxy Printer Interface (optional)
Galaxy RS232 Module (optional)
4 Outputs (Programmable)
Galaxy Smart Power Supply Unit (PSU) (addressed as 1)
8 Zones (Programmable)
Either:
OR
Galaxy Remote Input/Output module (RIO) (Addressed as 1)
4 Outputs (Programmable)
8 Zones (Programmable)

Figure 1.2 Galaxy 16 System Architecture.

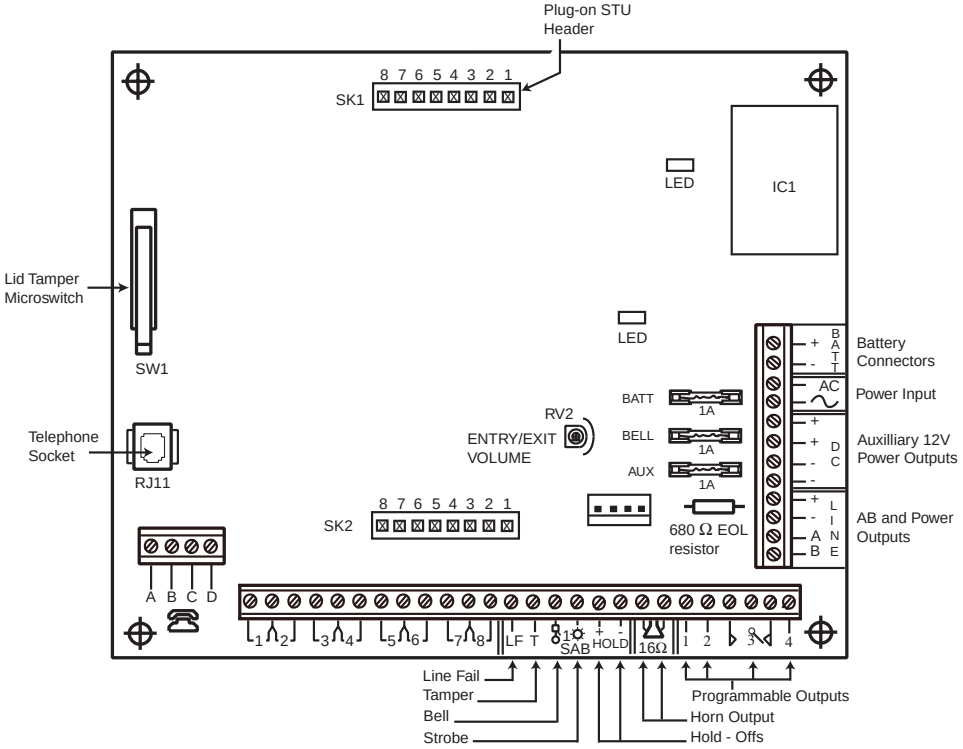


Figure 1.3 Galaxy 16 *plus* PCB Layout

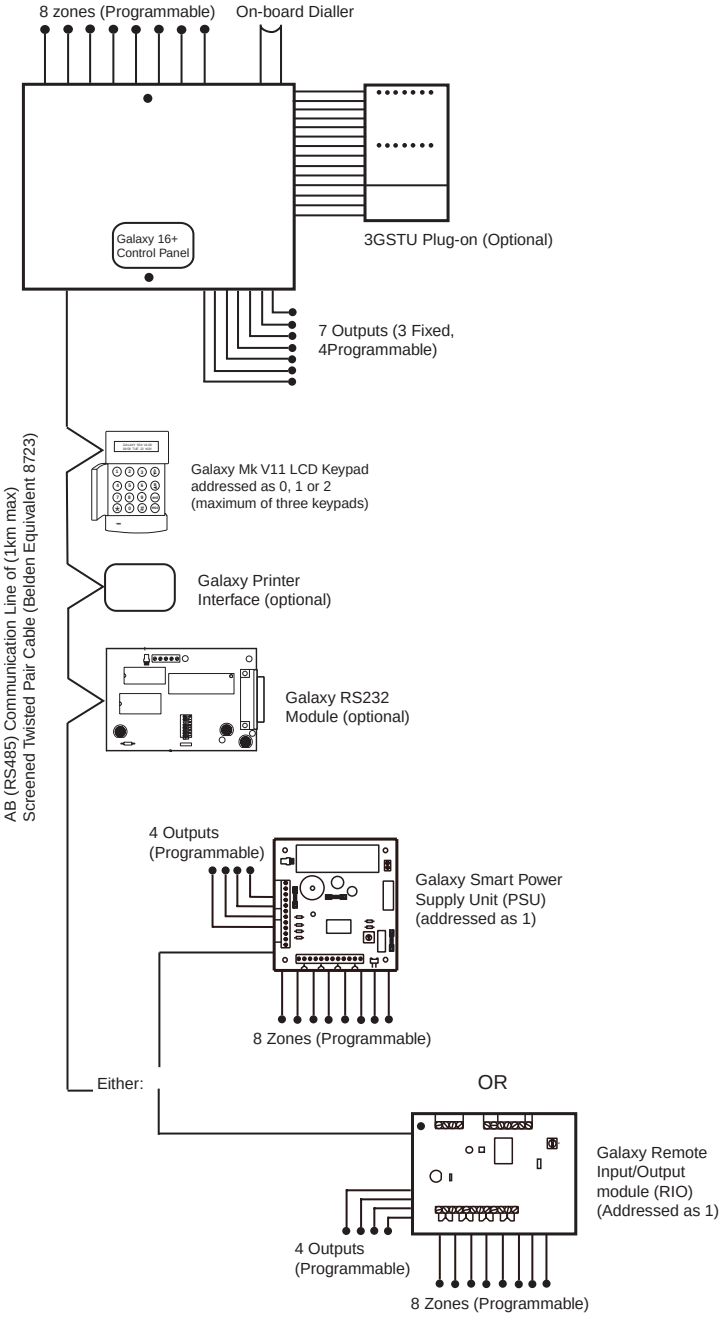


Figure 1.4 Galaxy 16 *plus* System Architecture.

System Installation and Wiring

The installation and wiring must be performed by a competent engineer. For permanently connected equipment a readily accessible disconnect device must be incorporated into the fixed wiring with contact separation of at least 3 mm on each pole. The Galaxy control panel must be connected to the a.c. mains supply (230 V (+10%, – 8%) a.c. 50 Hz) via a fused connection outlet.

The fuse in the mains outlet must not exceed 3 A.

Route the mains cable through the hole on the right hand side of the enclosure base. Securely anchor the cable to the enclosure base using the cable tie as shown in Figure 1.5 Securing the Mains Cable to the Panel.

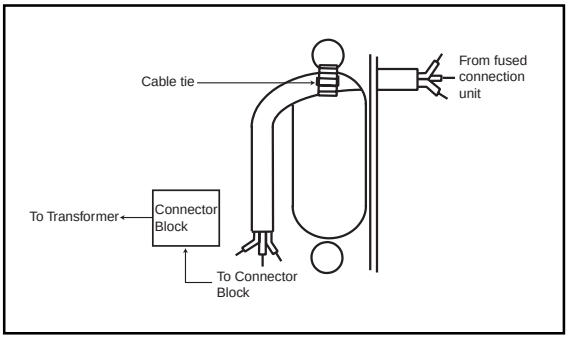


Figure 1.5 Securing the Mains Cable to the Panel.

Secure the enclosure base to the wall using three 1.5" No. 8 round-head steel screws through the holes provided.

The mains cable used must be a three core type (with green/yellow earth insulation) of adequate current carrying capacity.

Note: The mains cable must satisfy the requirements stated in BS6500.

Connect the mains cable to the mains terminal block as follows:

- blue wire to the terminal marked N (Neutral)
- green/yellow wire to the terminal marked (Earth)
- brown wire to the terminal marked L (Live)

Note: No other connections to the mains connector are permitted.

All wiring must be in accordance with the latest edition of the IEE Wiring Regulations (Regulations for Electrical Installations), see also BS7671.

Once all zone and module wiring has been completed replace the lid of the enclosure and screw the lid to the base with the screws provided.

Stand-by Battery

The Galaxy 16/16 *plus* can accommodate a 15 Ahr stand-by battery in the control panel enclosure. Ensure that the battery connector leads on the control panel PCB are connected to the correct terminals on the battery.

RS485 Data Communication Line (AB Line)

Communication between the Galaxy control panels and the attached modules takes place on the AB (RS485) communication line. The control panel constantly monitors the modules attached to it. A break in the communication from any of the modules generates a module tamper alarm.

It is strongly recommended that the system is wired in daisy chain configuration, the recommended maximum length of the AB line is 1 km. For more information see RS485 Wiring Recommendations below.

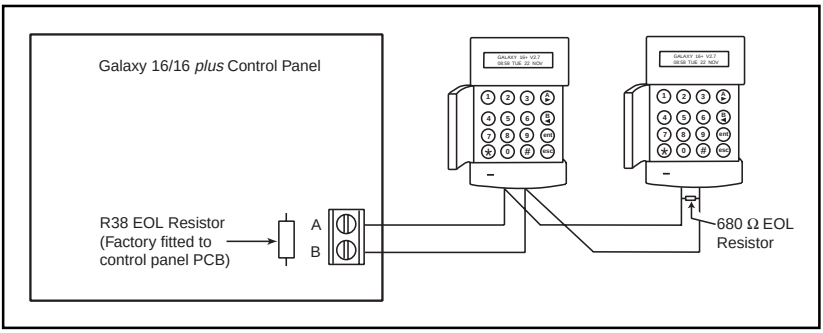


Figure 1.6 Daisy-Chain Configuration.

Two AB lines can be run from the control panel. This requires a minor hardware modification to the control panel PCB, see Figure 1.7 Twin AB Line Daisy-Chain Configuration.

- Cut resistor R38 on the control panel PCB.
- Run two lines from the A and B terminals.
- Terminate both Ends of Line with a 680 Ω resistor.

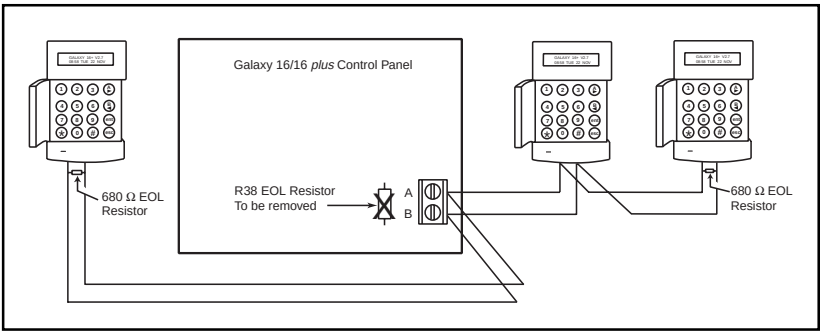


Figure 1.7 Twin AB Line Daisy-Chain Configuration.

Note: If a twin AB line configuration is to be used the maximum cable run is 1 km over both runs **not** 1 km per run.

RS485 Wiring Recommendations

To ensure that the system communicates at the maximum level of efficiency the following recommendations must be adhered to:

1. It is strongly recommended that the system is wired in a daisy-chain configuration. That is, the A terminal from the previous module is connected to the A terminal of the current module and then on to the A terminal of the next module. The B line should be connected in the same manner. Spur and star configurations should **not** be used as they reduce immunity to electrical interference.
2. The cable used to wire the AB line should be screened, twisted pair (Belden equivalent 8723) Part No. **W002**.
3. Screened, twisted pair cable, where used, is connected to ground (0 V) only at the P-clip in the control panel enclosure, see Figure 1.8 P-Clip Connection.
4. The AB line must have a 680 Ω End-of-Line (EOL) resistor fitted across the A and B terminals of the last module on the line. If two runs are connected, both ends must be terminated with 680 Ω (EOL) resistors and R38 on the control panel PCB must be cut, see Figure 1.7 Twin AB Line Daisy Chain Configuration.
5. The power supply in the Galaxy control panel and remote power supplies must **not** be connected in parallel. The 0 V of all remote power supplies should be connected in common to the 0 V of the Galaxy control panel.

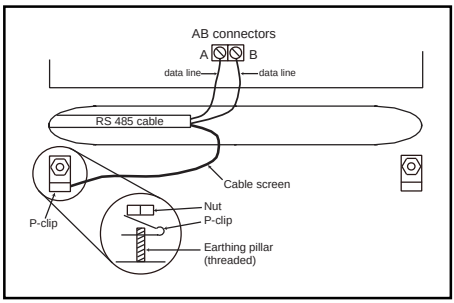


Figure 1.8 P-Clip connection.

Memory

The Galaxy 16 and 16 *plus* control panels are fitted with a Non Volatile Memory (NVM) chip. This allows the panels to retain programming details when both the mains power and stand-by battery have been disconnected. The NVM can be transferred from a Galaxy 16 or 16 *plus* to another without loss of programming.

Note: On swapping NVMs between a Galaxy 16 and 16 *plus* it is strongly recommended that the programming is restored to the factory defaults using the Cold Start parameter, refer to Section 5: MENU OPTIONS; Option 6 – Parameters; 9 Cold Start.

Zones

Wiring Zones

The zones on the Galaxy 16 and 16 *plus* control panels are end-of-line monitored. The zone is in the Closed condition when the system reads 1 kΩ and in the Open condition when the system reads 2 kΩ. The transition from 1 kΩ to 2 kΩ generates an alarm condition. Refer to Table 1.1 Zone Resistance and Conditions for details of the zone resistance and resulting conditions.

The circuit debounce time (the period the zone must remain open to register a change in condition) is 300 milliseconds.

Zone Resistance (Ω)	Condition
0 - 720	Tamper Short Circuit
721 - 1300	Normal (Closed)
1301 - 12500	Alarm (Open)
12501 - α	Tamper Open Circuit

Table 1.1 Zone Resistance and Conditions.

Note: The values in Table 1.1 operate within a tolerance band of ±4%.

The standard wiring of a detector into a zone is shown in Figure 1.9 Standard Zone/Detector Wiring. The recommended maximum cable run from a zone to a detector is 500 metres. This recommendation is based on 7 × 0.2 mm multicore cable.

Tamper switches should be closed in normal operation going open in the event of a tamper condition.

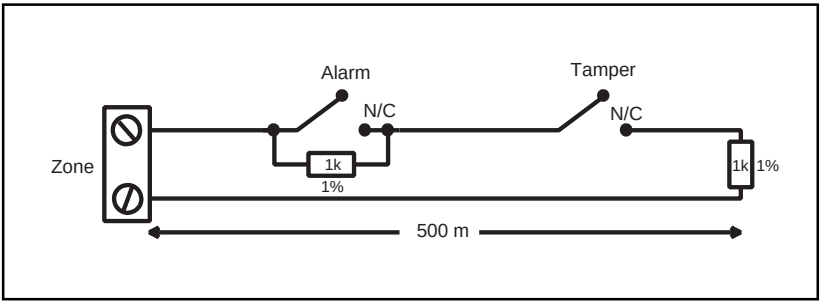


Figure 1.9 Standard Zone/Detector Wiring.

Wiring Multiple Zones

Multiple detectors can be wired into a single zone as shown in Figure 1.10 Zone to Multiple Detector Wiring. It is recommended that the maximum number of detectors wired into a single zone is ten.

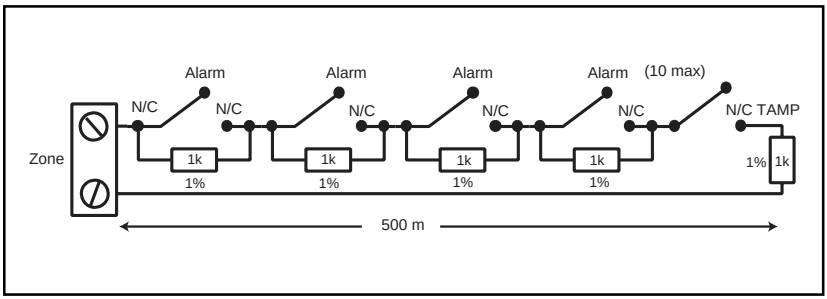


Figure 1.10 Zone to Multiple Detector Wiring.

Wiring Keyswitches

Keyswitches require to be latching, the transition from 1 kΩ to 2 kΩ initiates the setting procedure of an unset system; if the system is already set, then the transition from 1 kΩ to 2 kΩ has no effect.

The transition from 2 kΩ to 1 kΩ instantly unsets a set system, if the system is unset, the transition from 2 kΩ to 1 kΩ has no effect. The wiring of the keyswitch is shown in Figure 1.11 Keyswitch and Terminator Zone Wiring.

Wiring Exit Terminators (Push-to-Set)

Push-to-Set buttons can be open going closed (2 kΩ to 1 kΩ) or closed going open (1 kΩ to 2 kΩ). The wiring of the terminator is shown in Figure 1.11 Keyswitch and Terminator Zone Wiring.

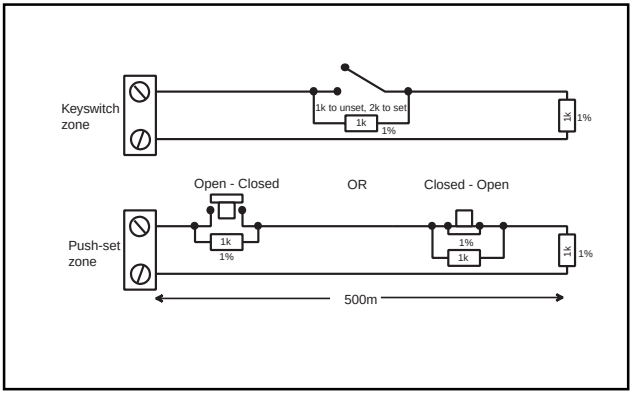


Figure 1.11 Keyswitch and Terminator Zone Wiring.

Note: The activation of an exit terminator during the first setting of the system may not set the system, it may be taken as the initialisation routine. If the system continues setting, push the button again, the system will set on the second push. This initialisation only occurs on the first setting after the zone has been programmed as Push Set. All subsequent setting routines set on the first push of the terminator.

Wiring the Line Fail Zone

The Galaxy 16 provides a dedicated Line Fail zone. This allows a digital communicator, which can be attached to the Galaxy 16 outputs, to be monitored for communications failure. The line fail output from the digital communicator must be negative removed in activation and is wired directly into the Galaxy 16 Line Fail zone. It is controlled by the STU programming. See Section 5 MENU OPTIONS: Option 13 – Communications 2; 4 STU options for programming details.

Note: No resistors should be connected to the Line Fail zone.

Line Fail in the Unset State

On the detection of a line fail in the unset state, a local alarm sounds and the LCD keypad displays the message ALARM IN PROGRESS. Entering a valid code cancels the alarm, the keypad display reads LINE FAIL. Subsequent Line Fail conditions will have visual indication only, the keypad will not give audible indication of a Line Fail until the system has been reset by an engineer.

Line Fail in the Set State

A line fail in the set state overrides the Bell Delay, refer to Section 5: MENU OPTIONS; Option 6 – Parameters; 8 Bell Delay, there is no alarm indication. If an alarm occurs during the line fail, then outputs programmed as Bells, Strobe and Horn activate immediately. On unsetting the system the keypad indicates that a line failure has occurred by displaying the LINE FAIL message.

Outputs

The Galaxy 16 and 16 *plus* control panels have seven outputs, three non-programmable and four programmable. The three non-programmable outputs are Bells, Strobe and Horn. The four programmable outputs default to Fire, PA, Intruder and Set. The Galaxy control panel outputs are detailed in Table 1.2 Galaxy 16/16 *plus* Outputs.

Output	Function	Programmable	Type	Current	Voltage	Normal State
	Bell	No	Transistorised	400 mA	12 V	Positive
	Strobe	No	Transistorised	400 mA	12 V	Positive
	Horn	No	Transistorised	400 mA	12 V	Positive
1	Fire	Yes	Transistorised	400 mA	12 V	Positive
2	PA	Yes	Transistorised	400 mA	12 V	Positive
3	Intruder	Yes	SPCO Relay	1 A	30 V	De-Energised
4	Set	Yes	Transistorised	400 mA	12 V	Positive

Table 1.2 Galaxy 16/16 *plus* Outputs.

Notes: SPCO Relay figures are ratings, all Transistor Voltage and current figures are output values.

The output polarities (Positive removed) cannot be changed.

Fixed Outputs

Bell

This positive removed output can be used to drive a bell or sounder and supplies up to 400 mA. The fixed Bell output activates in a full alarm condition. This output is subject to Bell Time, Bell Delay and Re-arm, refer to Section 5: MENU OPTIONS for programming details.

To prevent the Bell outputs from activating when the system is Part Set, disable (default is enabled) the Part Bells option, refer to Section 5: MENU OPTIONS; Option 6 – Parameters; 6 User Options; Part Bells.

Strobe

This positive removed output can be used to drive a strobe light and supplies up to 400 mA. The fixed Strobe output activates in a full alarm condition. This output is subject to Bell Time, Bell Delay and re-arm, refer to Section 5: MENU OPTIONS for programming details. The output can be disabled from the Re–Arm parameter allowing the strobe to operate continuously following a full alarm condition.

To prevent the Strobe outputs from activating when the system is Part Set, disable (default is enabled) the Part Bells option, refer to Section 5: MENU OPTIONS; Option 6 – Parameters; 06 User Options; 03 Part Bells.

Horn

This positive removed output is intended to drive a 16 Ω loudspeaker and supplies up to 400 mA. The fixed Horn output activates in a full alarm condition, in a local alarm condition, during the setting and unsetting procedures and on the activation of a zone programmed to Chime.

The output volume can be altered using the potentiometer (R47). This only affects the output volume for entry tones, exit tones and Chime – the output volume for alarm conditions is fixed at the maximum setting.

This output is subject to Bell Time, Bell Delay and re-arm in a full alarm condition.

Refer to Section 5: MENU OPTIONS; Option 8 – Outputs for programming details and Option 2 – Chime for details on the operation of the Chime function.

Voltage Outputs

Auxiliary 12 V d.c.

Two negative (0 V) and two positive 12 V d.c. supply terminals are provided for detectors and other devices.

Hold-Off

This positive and negative 12 V d.c. output is used to hold off the Self Activating Bell (SAB) and to recharge the sounder battery when required. The output is current limited to prevent shorting or over demand by the sounder battery.

Note: The Bell, Strobe and Hold-off outputs share a common fuse (F2).

Programmable Outputs

Outputs 1, 2 and 4 on the Galaxy 16 and 16 *plus* are negative applied (positive removed), transistorised outputs. The outputs can sink up to 400 mA and are used to drive output devices. The transistorised outputs are illustrated in Figure 1.12 Transistorised Output Configuration and Typical Applications.

Output 3 is a Single Pole Change Over (SPCO) Relay. This can be used to drive output devices that require a clean set of contacts, isolated from the output voltage. The SPCO Relay output is illustrated in Figure1.13 SPCO Relay Output Configuration and Typical Application.

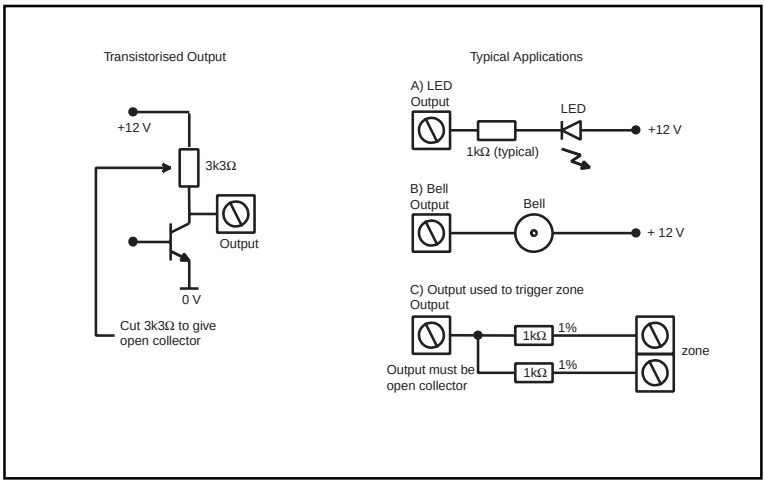


Figure 1.12 Transistorised Output Configuration and Typical Applications.

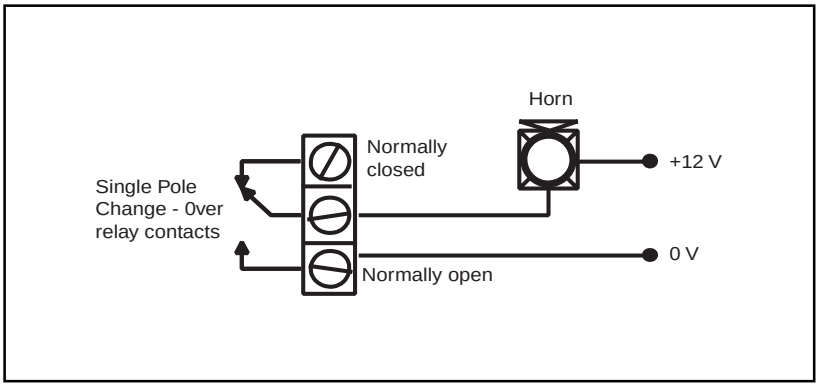


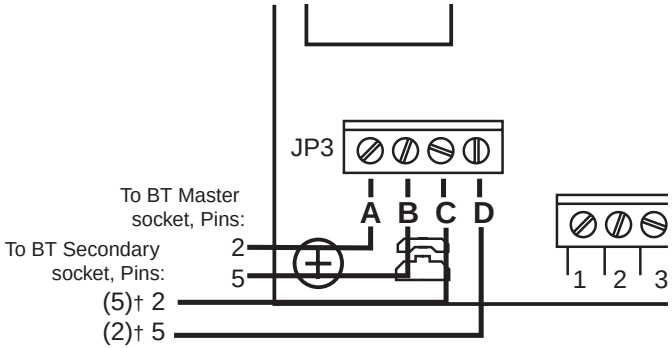
Figure 1.13 SPCO Relay Output Configuration and Typical Application.

Telecoms Connections (Galaxy 16 *plus* only)

Connection to the PSTN

The Telecommunications Network Voltage (TNV) port (terminals A and B on JP3) must be permanently connected (hard-wired) to the PSTN via a BT master socket, refer to Figure 1.14 Connecting the Galaxy 16 *plus* to the PSTN.

Note: If the BT master socket is the newer type (NTE5), then the connection can be carried out by the installation engineer. If the BT master socket is not an NTE5, then the connection must be made by the network operator.



† Some Secondary Sockets may have mirror images of the correct PIN assignments (Pin 1 is actually Pin 6). If this is the case, connect the Galaxy plus to the pins given in brackets.

Figure 1.14 Connecting the Galaxy 16 plus to the PSTN.

Using cable suitable for connection to 2.8 mm diameter screw terminals, strip back approximately 20 mm of the outer sheath and then remove approximately 4 mm of the insulation from the wires to be connected to the Galaxy 16 *plus*.

Connect the A wire to contact 2 on the BT master socket and the B wire to contact 5. Connect the A and B wires to the A and B terminals of JP3 on the Galaxy 16 *plus*, see Table 1.3 PSTN Connections to the Galaxy 16 *plus*.

Note: The cover of the control box must be replaced whenever any connection to the BT master socket is completed to prevent exposure to potentially lethal voltages from the PSTN.

Interconnection circuits should be such that the equipment continues to comply with the requirements of 4.2 of EN41003 for TNV (Telephone Network Voltage) circuits and 2.3 of EN60950 of SELV (Safety Extra Low Voltage) circuits, after making connections between circuits.

Connecting Additional Telecom Apparatus

A BT secondary socket, allowing additional telecom apparatus to be connected in series with the Galaxy 16 *plus* can be connected to the TNV port C and D (JP3) on the Galaxy 16 *plus* see Figure 1.14 Connecting the Galaxy 16 *plus* to the PSTN.

Connect the contacts on the BT secondary socket to the JP3 as follows:

BT Master Socket	BT Secondary Socket (if used)	Galaxy 16 plus (JP3)
2	-	A
5	-	B
-	2 (5)†	C
-	5 (2)†	D
† Some BT Secondary Sockets may have mirror images of the correct PIN assignments (Pin 1 is actually Pin 6). In this case connect the Galaxy 16+ terminal to the Pin numbers given in brackets		

Table 1.3 PSTN Connections to the Galaxy 16 *plus*.

The Galaxy 16 *plus* and BT RedCare STUs

As both the Galaxy 16 *plus* and STUs require to be the first modules on the line it is strongly recommended that they are connected to different telephone lines.

Regulations

The Galaxy 16 *plus* is approved for connection to direct lines of the PSTN and PBX exchanges (with or without secondary proceed indication). Tone and Pulse dialling are supported, see note in Section 6: COMMUNICATIONS MENU OPTIONS; 6 Format.

It should be noted that the Galaxy 16 *plus* is not suitable as an extension to a payphone.

The Galaxy 16 *plus* has been approved for the use of the following facilities:

- Auto-dialling.
- Auto-answering.
- Auto-clearing.
- Modem communications.
- Series connection.
- Operation with Call Process Monitor (CPM) tone recognition.
- Multiple repeat attempts.

Any other usage invalidates the approval of the Galaxy 16 *plus* if, as a result, it then ceases to comply with standards against which approval was granted.

Approval of the Galaxy 16 *plus* is also invalidated if it is used with internal software or subjected to any hardware modification not authorised by BABT.

Public Switched Telephone Network (PSTN) Approval

The equipment has been approved to {Council Decision 98/482/EC} for Pan - European single terminal connection to the Public Switched Telephone Network (PSTN). However due to differences between the individual PSTNs provided in different countries the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN network termination point.

In the event of problems contact the equipment supplier in the first instance.

The Galaxy is designed to interwork with the following networks:

Austria	France	Italy	Norway	Switzerland
Belgium	Greece	Liechtenstein	Portugal	United Kingdom
Denmark	Iceland	Luxembourg	Spain	* Germany
Finland	Ireland	The Netherlands	Sweden	

Note: Contact the equipment supplier before using the Galaxy 16 *plus* on any network.

REN and SEN Numbers

It is possible to simultaneously connect a number of items to one line of the PSTN. The limit is determined by summing the Ringer Equivalence Number (REN) shown on each item of apparatus, ensuring that the sum of RENs is not more than four.

The REN of the Galaxy 16 *plus* is one (1).

Assume that all British Telecom equipment has a REN of one unless otherwise marked.

* *May have interworking difficulties*

More than one item of series apparatus may be connected to the Galaxy 16 *plus* TNV ports marked C and D. This is limited by summing the Series Equivalence Number (SEN) shown on each item of series connected apparatus, ensuring that the sum of the SENs is not more than one (1). The total series resistance, including cabling, must not exceed 50 Ohms.

1. The SEN of the Galaxy 16 *plus* is 0.3.
2. Nominal series resistance is 90 milliohms.
3. Nominal insertion loss is 0.1 dB.

Note: Difficulties may be experienced when making calls from other apparatus if the total SEN value approaches one or the total series resistance 50 Ω.

If such difficulties are experienced, please consult the Galaxy 16 *plus* installer or supplier, not BT.

It is recommended that the PSTN should have the following facilities:

1. Outgoing calls only (when used as dialler only).
2. Direct exchange.
3. Pulse or tone dialling.

Private Branch Exchange (PBX) Connection

The Galaxy 16 *plus* is only approved for use with BABT approved PBXs. The correct operation of the Galaxy 16 *plus* can **not** be guaranteed under all possible conditions of connection to compatible PBXs.

When connected to a PBX, the Galaxy 16 *plus* can be programmed to detect an additional dial tone or to pause for two seconds between the dialling of the digits. For details on programming see Section 6: COMMUNICATIONS MENU OPTIONS; 2 Telephone Number 1.

Section 2: OPTIONAL MODULES

Galaxy Remote Input Output (RIO) Module

A Galaxy RIO module can be connected to the Galaxy 16 and 16 *plus* to expand the system by eight zones and four outputs.

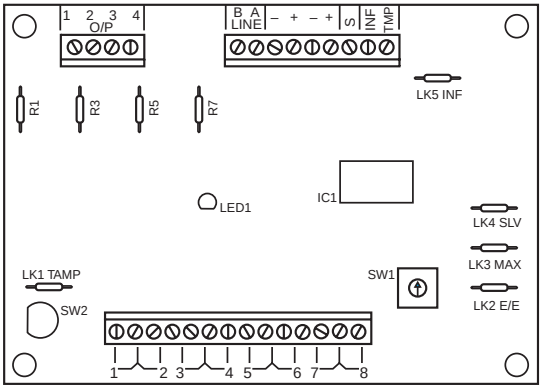


Figure 2.1 Galaxy RIO Module PCB Layout.

RIO Tamper

Switch SW2 on the RIO module acts as a tamper if Link 1 is missing (absent by default). Removal of the lid from the RIO enclosure activates the RIO tamper alarm if the system is not in Engineer Mode. The tamper switch can be by-passed by fitting a 0 W link to LK1.

Addressing the RIO

The Galaxy RIO **must** be addressed as **1**. It must be addressed **before** it is connected to the power supply, the address is selected using the 16-way rotary switch (SW1), refer to Figure 2.1 Galaxy RIO Module PCB Layout.

Connecting the RIO

The RIO can only be connected to the system while Engineer Mode is accessed. It is strongly recommended that the AB line of the Galaxy RIO is wired in parallel (daisy-chain configuration) with the AB line of any keypads connected to the system. The RIO requires 12 V d.c. (range 10.5 V to 16.0 V) and 50 mA. This can be supplied from the control panel power supply or from a remote power supply if the distance causes a large voltage drop on the cable.

Note: A 3 A Smart PSU (part number **P015**) can be fitted in place of a RIO and remote power supply.

The connections to the RIO terminals are given in Table 2.1 Galaxy RIO Connections.

RIO Terminal	Connected to...
+	+ 12 V (at a control panel, keypad or remote power supply).
–	0 V or ground (at a control panel, keypad or remote power supply).
A	To the A terminal of the previous module on the line (or the control panel if the RIO is the first module on the line).
B	To the B terminal of the previous module on the line (or the control panel if the RIO is the first module on the line).

Table 2.1 Galaxy RIO Connections.

Note: The last module on the line must have a 680 Ω resistor connected across the A and B terminals.

Configuring the RIO

The RIO is configured into the system on exiting from Engineer Mode. On exiting Engineer Mode the message `1 MOD. ADDED – esc=CONTINUE` is displayed confirming that the RIO has been added. If this message is not displayed then the RIO is not communicating with the control panel.

The flash rate of the red LED (LED1) on the RIO indicates the status of the communication with the control panel — refer to Table 2.2 RIO LED Flash Rates.

Flash Rate (seconds)	Meaning
0.1 on / 0.9 off	Normal Communications
Off	No d.c. supply
1.5 on / 1.5 off	RIO not configured into system
0.2 on / 0.2 off	RIO has lost communications with system
0.9 on / 0.1 off	RIO has poor communications with system

Table 2.2 RIO LED Flash Rates.

RIO Zones

The Galaxy RIO has eight programmable zones all of which default to Intruder. The wiring of the RIO zones is identical to that of the zones on the Galaxy 16 and 16 *plus* control panels, see Section 1: SYSTEM ARCHITECTURE; Zones.

RIO Outputs

The RIO has four transistorised outputs, each output is positive removed. When an output is activated, the load is switched to the negative supply voltage (ground or 0 V) of the RIO. The current available from each output is 400 mA.

The default functions of each RIO output, when connected to a Galaxy 16 or 16 *plus*, are shown in Table 2.3 RIO Output Default Functions.

Output No.	Default Function
1	Fire
2	PA
3	Intruder
4	Set

Table 2.3 RIO Output Default Functions.

3 A Smart Power Supply Unit (Smart PSU)

One 3 A Smart Power Supply Unit (Smart PSU) can be connected to the Galaxy 16 and 16 *plus* control panels. The Smart PSU integrates a three ampere power supply with an eight zone, four output Galaxy RIO. This may be used in place of a standard RIO to overcome power problems that arise when the additional RIO is fitted distant to the control panel.

Notes: Only one Smart PSU **or** one RIO can be connected to the Galaxy 16 and 16 *plus* control panels.

A Smart PSU fitted to a Galaxy 16/16+ has full on-board RIO facilities but it does not have the "Smart" power diagnostic facilities available with other Galaxy control panels.

The addressing, zone and output wiring is identical to that of the Galaxy RIO, see Optional Modules; Galaxy Remote Input Output (RIO) Module.

The Galaxy Smart PSU **must** be addressed as **1**. It must be addressed **before** it is powered up, the address is selected using the 16-way rotary switch (SW1), refer to Figure 2.2 Galaxy 3 A Smart PSU PCB Layout.

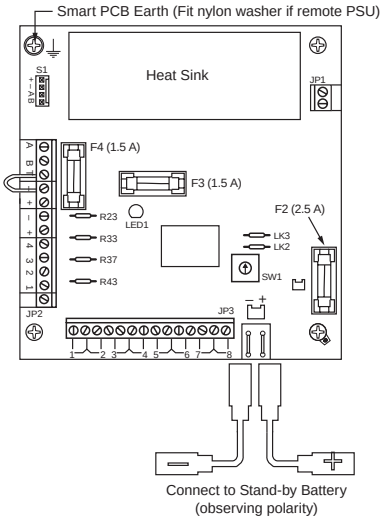


Figure 2.2 Galaxy 3 A Smart PSU PCB Layout.

The Smart PSU has two separately fused regulated 12 V d.c. outputs, each capable of supplying 1.5 A to additional modules and devices. A fused regulated voltage is also supplied to charge a 12 V lead-acid stand-by battery.

For further information refer to the **Galaxy Smart Power Supply Unit Installation Instructions** (Part Number: **L101**).

The default functions of each Smart PSU output when connected to a Galaxy 16/16 *plus* control panel, are shown in Table 2.4 Smart PSU Output Default Functions.

Output No.	Default Function
1	Fire
2	PA
3	Intruder
4	Set

Table 2.4 Smart PSU Output Default Functions.

RS232 Interface Module

The Galaxy RS232 module provides full duplex serial communication between the Galaxy 16/16 *plus* control panels and PCs or serial printers. This module has three main functions:

- Copy and overwrite the control panel programming.
- Interface with a PC.
- Interface with a serial printer.

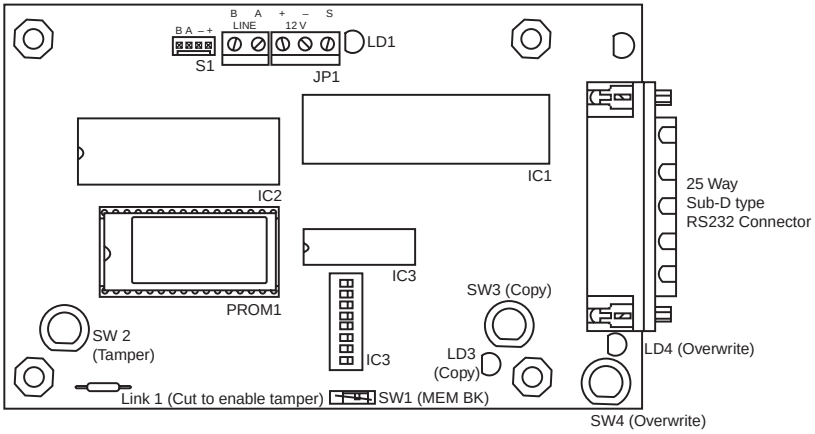


Figure 2.3 RS232 Interface Module.

RS232 Tamper

Switch SW2 on the RS232 module acts as a tamper if Link 1 is cut. Removal of the lid from the RS232 module enclosure when the system is connected to the Galaxy 16/16 *plus* activates the RS232 tamper alarm if the system is not in Engineer Mode.

Galaxy RS232 Settings

The RS232 module is configured using the DIP switches on the PCB; the settings are summarised in Table 2.5 RS232 Module DIP Switch Settings, for more information see the **Galaxy RS232 Operating Instructions** (Part Number: **L114**).

		Setting	
DIP Switch	**Function**	**ON**	**OFF**
1	Printer/PC interface	Printer	RS232 (PC Interface)
2	Stop Bits (2 or 1)	2	1
3	Data Bits (7 or 8)	7	8
4	Even/Odd Parity	Odd	Even
5	Parity On/Off	Parity	No-Parity
6 7 8	Baud Rate	Refer to Table 2.6 RS232 Baud Rate Settings.	

Table 2.5 RS232 Module DIP Switch Settings.

Copy and Overwrite

The control panel programming can be copied to the RS232 module and stored for up to 28 days (indefinitely if the module is constantly powered). The programming can then be downloaded (overwritten) to one of the following: the same control panel, another Galaxy 16 or 16 *plus*, or to a PC with Galaxy Gold software installed; Galaxy Gold can then be used to modify the site programming.

Interfacing with a PC

The Galaxy 16/16 *plus* control panel can be directly linked to a PC via the RS232 module allowing local servicing using Galaxy Gold.

Galaxy RS232 Module as a Serial Printer Interface

The module can also operate as an interface to a **serial** printer, refer to Table 2.5 RS232 Module DIP Switch Settings and to Table 2.6 RS232 Baud Rate Settings. The RS232 must be set up with the printer setting outlined in Table 2.7 Printer Settings. For printing instructions, refer to Table 3.3 Star Key (✶) Combinations.

For further information refer to the **Galaxy RS232 Operating Instructions** (Part Number: **L114**).

Baud Rate	DIP Switch Setting		
	6	7	8
300	Off	Off	Off
600	Off	Off	On
1200	Off	On	Off
2400	Off	On	On
4800	On	Off	Off
9600	On	Off	On
19200	On	On	Off
38400	On	On	On

Table 2.6 RS232 Baud Rate Settings.

Printer Interface Module

The Printer Interface module allows the Galaxy to be connected to a serial printer and the contents of the event log and the programming details of the system to be printed. The module is available with either a:

- 25 way sub D type RS232 serial connector (part number **A161**), or,
- 6 pin DIN plug (part number **A134**).

The printer interface module can be connected to the Galaxy system at S1 on the control panel.

The printer **must** have a serial interface port. The printer protocol must be set up as outlined in Table 2.7 Printer Settings.

Protocol	Setting
Start Bit	1
Stop Bit	1
Word Length	8 Data Bits
Parity	None
Baud Rate	1200

Table 2.7 Printer Settings.

Galaxy Gold

Galaxy Gold is a software program that allows a PC to communicate and control the Galaxy 16 and 16 *plus* control panels. The software program can also upload, store and download control panel programming. Galaxy Gold operates with the following configurations:

- **Galaxy 16:** locally serviced via an RS232 module.
- **Galaxy 16 *plus*:** locally serviced via an RS232 module **or** remotely serviced via the on-board communicator.

Note: This software program is only available to registered Galaxy Gold users.

Alarm Monitoring

Alarm Monitoring is an advanced, high performance software programme that allows a PC to receive and store event and alarm information from Galaxy control panels.

Note: This software programme is only available to registered Alarm Monitoring users.

3GSTU-PLI

The 3GSTU-PLI is a plug-on module which allows the Galaxy 16 *plus* to be connected to the BT RedCARE service. The 3GSTU-PLI connects to the SK1 and SK2 connector blocks on the Galaxy 16 *plus* PCB which supply the power, output and alarm input to the module.

For further details on the installation and operation of 3GSTU units see the accompanying literature. For details on programming the STU options of the Galaxy 16 *plus* see Section 6: COMMUNICATIONS MENU OPTIONS; Option 13 – Communications 2; 4 STU Outputs and 5 STU Triggers.

Note: The 3GSTU-PLI can also be used on the Galaxy 16 panel with software version 2.7 or later.

Section 3: GALAXY KEYPADS

General

The programming and operation of the Galaxy 16 and 16 *plus* control panels is carried out using the Galaxy Mark 7 (Mk V11) keypad. This keypad has a 2 × 16 character liquid crystal display. Up to three keypads can be fitted to the Galaxy 16/16 *plus* control panels.

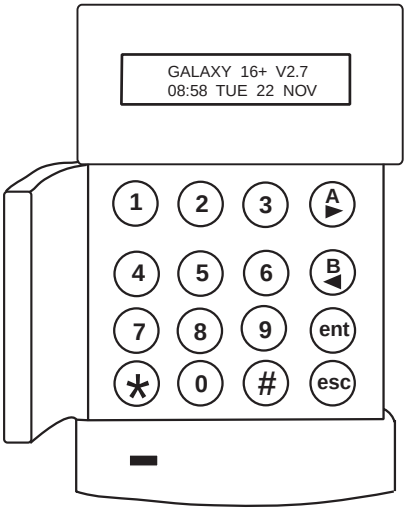


Figure 3.1 Galaxy Mk V11 keypad.

Power Consumption

The Galaxy Mk III keypads require a 12 V d.c. supply from the control panel or a remote power supply. The current consumption of the keypads is:

Mode	Current Draw Mk7 (LCD)
Backlight OFF	60 mA
Backlight ON	70 mA
Maximum (Buzzer and LED)	120 mA

Table 3.1 Keypad Current Consumption Figures.

Wiring

Connections to the keypad terminals are given in Table 3.2 Keypad Terminal Connections.

Galaxy Keypad Terminal	Connected to...
B	B line
A	A line
+	12 V d.c. input
–	0 V

Table 3.2 Keypad Terminal Connections.

Addressing

The valid addresses for Galaxy keypads connected to a Galaxy 16/16 *plus* control panel are 0, 1, and 2. A 16-way rotary address switch is used to address Galaxy Mk III keypads. The address switch assigns a hexadecimal address value to the keypad. The factory default address is 0.

Notes: Any change to the keypad address must be made when the power is disconnected from the keypad.

Each keypad must have a unique address.

Keypads can have the same address as a RIO or Smart PSU.

Tamper Switch

The Galaxy keypads provide a tamper switch that operates when the keypad is detached from the keypad mounting bracket.

The keypads are designed to allow the option of an additional wall tamper which will cause a tamper alarm should the entire keypad (including the mounting bracket) be prised from its mounting. The tamper spring retainer (located on the Galaxy keypad mounting bracket) can be knocked-out to allow the tamper spring contact with the wall, this enables the wall tamper, see Figure 3.2 Keypad Installation and Mounting Details.

Backlighting

When initially connected to the control panel, the keypad is permanently backlit. The backlighting can be switched off and on using the shift function keys, refer to Star Key (✶) Features.

During an a.c. mains failure condition, to save the available stand-by battery power, the keypad backlight is turned of until the a.c. mains supply is restored.

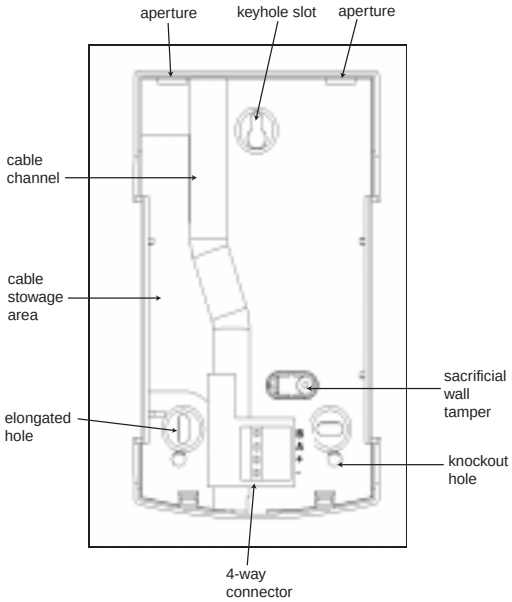


Figure 3.2 Keypad Installation and Mounting Details.

Keypad Mounting Procedure

1. Remove the keypad from its packaging.
2. To attach the keypad to the wall, the back plate must first be removed from the front plate. To do this, insert a suitable tool into both openings at the bottom of the keypad and turn the tool gently.

   CAUTION: When the keypad is separated make sure that the anti-static precautions are taken with the keypad pcb to avoid damage from esd (electro static discharge).
3. Use the backplate as a template, then mark the locations for the three attachment screws in the required position.
4. If it is a new installation, use the keyhole slot at the top of the backplate and the two elongated holes at the bottom. If replacing an existing Mk3 keypad with a Mk7 keypad, use the keyhole slot at the top of the backplate and the two knockout holes at the bottom. This means that you can use the existing holes in the wall, whist keeping the backplate in the same position.
5. If you are using a wall-run cable for the keypad (A, B, +12V, 0V) position the cable behind the back plate in the cable channels provided. The cable can be run in from either the top or the bottom of the back plate. Use a sharp tool to remove the plastic from the top or the bottom of the cable guides on the back plate skirting.

CAUTION: Use of any screws other than No. 6 Pan-head can damage thekeypad mouldings.

6. Make sure that the keypad wiring is fed through the large opening on the keypad backplate, then position the keypad base on the wall and attach it securely with the three No. 6 Pan-head screws.
7. If an off the wall tamper is required, using a No. 6 Pan-head screw, secure the sacrificial wall tamper, indicated in Figure 4-2, to the wall. Make sure that the tamper knockout is still connected to the backplate moulding.
8. Connect the A, B and power wires to the correct terminals of the removable, four-way connector block.
9. Make sure that the power is disconnected then set the keypad to a unique address using the 16 way rotary switch on the PCB.
10. To re-assemble the keypad, connect the four-way connector block onto the pins on the keypad PCB. Attach the keypad front plate to the back plate by inserting the two clips on the top of the keypad front plate into the two apertures at the top of the keypad back plate, then gently push the bottom of the keypad front plate into the back plate until it snaps securely into place.

    Note: The keypad door can be re-orientated to allow opening from either the left or right-hand sides. However, fitting or removal of the door must only be done when the front plate is detached from the back plate. Attempting to remove or install the door, when the keypad is assembled, may cause damage to the keypad mouldings.

Adding a Keypad to the System

When adding a keypad to an existing system, the following points must be considered:

1. Ensure that the keypad to be added has a unique address from the other keypads on the system.
2. Ensure that there are no more than two keypads already on the system
3. A new keypad can only be configured into a Galaxy 16 or 16 *plus* system from Engineer Mode.

Configuring a Keypad on to the System

To configure a keypad onto the system:

1. Access Engineer Mode.
2. Ensure that the AB line of the keypad is wired in parallel with the AB line of the existing keypads.
3. Connect the + 12 V d.c. and – 0 V terminals of the keypad to a power supply.

4. Exit Engineer Mode by entering the Engineer Code and pressing esc: the keypad displays the message `1 MOD. ADDED – esc=CONTINUE`. Press the esc key; the keypad display returns to the Unset Banner. If this message is not displayed, the keypad is not communicating with the control panel.

The keypad is now configured into the system.

Removing a Keypad from the System

A keypad can only be removed from an existing Galaxy 16 and 16 *plus* system from Engineer Mode.

1. Access Engineer Mode from another keypad.
2. Disconnect the keypad to be removed from the system.
3. From the other keypad Exit Engineer Mode. The message `1 MOD. MISSING – [<],[>] to View` is displayed
4. Press the A or B key.

   The message `KEYPAD X – ✳=REMOVE MODULE` is displayed.
5. Press the ✳ key to acknowledge and accept that the keypad has been removed. The keypad returns to the unset banner.

Keypad Self Diagnostics

The Galaxy Mk III keypads have a self diagnostic feature that is used to test the operational status of the inputs and outputs of the keypads.

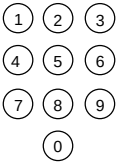
The test is started by disconnecting the power from the keypad, then reapplying the power while pressing the ent key. The test routine commences immediately. Each test last approximately five seconds. The test is terminated by removing the power.

During the test the:

- Keypad address is displayed.
- Keypad buzzer is activated and a bell symbol is displayed.
- Power LED is illuminated and an a.c. and LED symbol are displayed.
- Keypad and keys are displayed. Each key press is confirmed by the buzzer sounding and the key display being highlighted.

Keypad Operation

Number Keys



The number keys are used to enter the codes which identify the users to the Galaxy control panel and permit access to the system menu options.

Once access to the system has been gained, the number keys are also used to select and modify menu options allowing system programming and setting and unsetting of the system.

View Key

The A key is used to advance forwards through the menu options, the B key to go backwards through the menu options.

The A and B keys are used to initiate the setting of the Galaxy. Pressing the A or B key after entry of a valid code starts the setting routines for the system, see Section 4: Setting Options.

Escape Key

The esc key cancels any modification made to the current option and returns to the previous menu level. Successive pressing of this key returns the user to the display banner. This is with the exception of Menu options 11 Text and 01 Omit where pressing the esc button accepts the programming.

The esc key also aborts the setting routine if pressed during the Exit Time.

Enter Key

The ent key is used to:

- Access the menu options.
- Confirm the programming selections.

Hash Key

The # key is used as a toggle key, which enables or disables the programming attributes of the Galaxy menu options.

Star Key

The * key is used as a shift key, which, when combined with other keys provides additional Galaxy features, see Star Key Features below.

The * key is also used to erase PINs in the Codes menu option, see Section 5: MENU OPTIONS; Option 4 – Codes, and alpha-numeric characters in the text menu option, see Section 5: MENU OPTIONS; Option 11 – Text.

Star Key Features

Key Combination	Star Feature
✶1	Changes keypad buzzer volume.
✶2	Activates PA Silent alarm.
Mgr. Code + ✶3†	Toggles On/Off to authorise Galaxy Gold connection.
✶4	Toggles keypad backlighting On/Off.
✶5	Activates Medical alarm.
Code + ✶6	Prints the entire system details.
Code + ✶7	Prints the entire event log.
✶8	Activates the Fire alarm.
✶9†	Initiates the Engineer's Test.
✶#	Indicates zone statuses.
Mgr. Code + ✶ent†	Activates the Mgr Authorised Call Back.
Mgr. Code + ✶esc	Toggles the Star key features On/Off.
†Galaxy 16 *plus* only.	

Table 3.3 Star (✶) Key Combinations.

The Star key features are by default disabled. These features may be enabled by entering either the Manager Code or the Engineer Code and then pressing the ✶ and esc keys simultaneously.

Note: Enabling the star key features at a keypad enables them for that keypad only. Each keypad must be enabled/disabled individually.

- **✶ 1**: This option changes the volume of the keypad buzzers. There are three volume levels: Volume Off, Volume Low and Volume High.
- **✶ 2**: Activates a PA Silent alarm, this activates PA Silent outputs only.
- **✶ 3**: Entering the Manager Code (Usr 14) and pressing Star/3 toggles the Authorise Galaxy Gold (remote servicing) status. For the Star/3 feature to operate menu option 12: Comms 1; 10 Access must be set up for Manager Authorise.

  Note: This option is available on the Galaxy 16 *plus* only.
- **✶ 4**: Toggles the keypad backlighting on/off.
- **✶ 5**: Activates a Medical alarm condition, see Section 5: MENU OPTIONS; Option 8 – Outputs; 11 Medical.

✱ 6: Entering a User Code or the Engineer Code and pressing Star/6 initiates a print out of the System details. Pressing esc aborts the printing. A serial printer must be connected to the system via an RS232 module or printer interface module, see Section 1: SYSTEM ARCHITECTURE.

The print out includes: System (software version, system time and date), Chime (zone programming) and Codes (User Code attribute programming (this does not include the actual code)).

To skip any of the three sections (System, Chime and Codes) press the # key, to abort the printing press the esc key.

Note: A hash (#) or pound symbol (£) may appear next to some of the entries in the print out, eg `£, 09=CHIME` or `#, 09=CHIME`. A # or £ symbol indicates that these entries have that option disabled. An entry without the # or £ symbol, eg `Chime` next to a zone, indicates that the option is enabled.

✱ 7: Entering a User Code or the Engineer Code and pressing Star/7 initiates a print out of the Event Log. Pressing esc aborts the printing. A serial printer must be connected to the system via an RS232 module or printer interface module, see Section 1: SYSTEM ARCHITECTURE.

The print out is a replica of the Event Log as viewed via a Galaxy keypad. For details on reading the Event Log see Section 5: MENU OPTIONS; Option 9 – Event Log.

✱ 8: Activates a Fire alarm, see Sec. 5: MENU OPTIONS; Option 8 Outputs.

✱ 9: Entering a User Code or the Engineer Code (Usr 15) and pressing Star/9 initiates the Engineer's Test (Channel/Code 9) which sends a test signal to the Alarm Receiving Centre.

Note: This option is available on the Galaxy 16 *plus* only.

✱ ent: Entering the Manager Code (Usr 14) and pressing Star/ent activates the Manager Authorise Call Back option for Galaxy Gold. For more information on Call Back see Section 5: MENU OPTIONS; Option 12 – Comms 1; 10 Access; 2 Manager Authorise.

Note: This option is available on the Galaxy 16 *plus* only.

✱ esc: Entering the Manager Code (Usr 14) or the Engineer Code (Usr 15) and pressing Star/esc toggles the Star features on/off.

Viewing the Zone Resistances using the Star Key

If the Star (✶) key functions are enabled, pressing the ✶ and # keys together displays the states of the zones in the system.

View Function 1

The first time they are pressed the keypad displays the number of open zones. The open zones may be viewed by scrolling forward and backwards using the A and B keys, the keypad displays the zone number and zone descriptor. If no descriptor has been entered for that zone then it displays the zone type, see Section 5: MENU OPTIONS; 11 – Text. If one of the open zones closes, or another zone opens the keypad again displays the number of zones currently open.

View Function 2

If the ✶ and # keys are pressed together for a second time, any open or closed zones are displayed on the keypad. Press the ✶ and # keys for a third time and the display returns to the banner message. Zones numbered 10 to 16 are numbered A to G. Refer to Table 3.4 Zone Status Indication.

Zone Status	Function 1	Function 2
All closed	00 Open.	All zones closed.
Zone(s) open	Zone number(s) and description(s).	Zone number(s).
Open Circuit	No message.	∞
Closed Circuit	No message.	0

Table 3.4 Zone Status Indication.

Power LED

The green power LED indicates the status of the a.c. power supply and the stand-by battery.

Power LED	AC Status	Battery Status	Fuse Status
On	AC OK	Battery OK	Fuses OK
Slow Flash	AC Fail	Battery OK	Fuses OK
Quick Flash	AC Fail/OK	Battery low and/or fuse blown	

Table 3.5 AC/Battery/Fuse Status Indication.

Note: It is advised that a suitably rated stand-by battery is fitted to the system in order to provide continued protection in the event of an a.c. mains failure. The battery is not included, see Section 1: System Architecture; System Installation and Wiring; Stand-by Battery.

Banner

The banner is the information shown on the keypad display when the system is in the unset state and the menu options are not being activated.

There are two banners:

GALAXY 16+ V2.XX 22:16 THU 06 FEB

The unset mode banner displays the Galaxy variant and software version, the time, day and date. The Unset banner may be altered, see Section 5: MENU OPTIONS; Option 6 – Parameters; 12 Banner Top and 13 Banner Bottom.

ENGINEER MODE 07:29 SAT 01 JAN

The Engineer banner indicates that the system is in Engineer Mode as well as displaying the time, day and date.

Section 4: SETTING OPTIONS

Overview

A valid code must be entered at the keypad before setting or unsetting of the system may take place.

Illegal Code Entries

On entry of an invalid code the keypad displays the message INVALID CODE. Entry of six invalid codes causes a local alarm, the keypad will lockout for ten minutes. The lockout can be cancelled by removing the power from the control panel for thirty seconds. On power up the control panel returns to the day banner and the lockout condition is cancelled.

Code Setting Attributes

Each User Code has five programmable setting attributes, these are: Set Access, Unset Access, Part 1 Access, Part 2 Access and Part 3 Access. Enabling the:

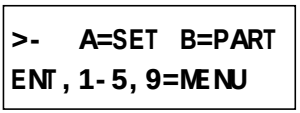
- Set Access attribute allows the user code to Set or Part Set the system
- Unset Access attribute allows the user code to unset the system
- Part Set attributes allows the user code to perform Part Sets on the system, setting/unsetting those Parts assigned to the code.

For more information on programming the user code attributes see Section 5: MENU OPTIONS; Option 4 – Codes; Programming Codes and Code Attributes.

Once the code has been entered the user is given a choice of Set, Part Set or Menu options, see Figure 4.1 Set, Part Set and Menu Choice.

For details on parts see The Galaxy 16/16 *plus* and Parts.

For details on performing a set see Setting the System; for details on Part Sets see Part Setting the System and for details on Menu options see Section 5: MENU OPTIONS.



Manager code (Usr 14) Set, Part Set and Menu options.

Figure 4.1 Set, Part Set and Menu Choice.

The Galaxy 16/16 *plus* and Parts

The Galaxy 16/16 *plus* control panels are divided into three parts or subsystems. Each of the zones on the system must be assigned to one of these parts. This means that the user may select a subset of all the zones on the system setting/unsetting them without affecting the other zones. The system is full set when all three parts are set. The system is part set when one or two parts have been set.

Setting the System (the A Key)

To set the system the user must first enter their code, then press the A key. This initiates the setting of all parts of the system assigned to that user code.

Once the setting has been initiated the keypad displays the exit time count-down; at the end of the exit time, or when a Final or Push-to-Set zone terminates the setting procedure, the Horn outputs and the keypad buzzers become silent for four seconds, the countdown blocks on the keypad display all clear. The Horn outputs and keypad buzzers then emit two long tones to confirm that the system is set. On the keypad the message SYSTEM IS SET appears briefly before the display clears, see Figure 4.2 Setting Routine.

Note: If the Instant Key 0 option is used to terminate the setting then no confirmation beeps are given. See Section 5: MENU OPTIONS: 6 – Parameters; 6 User Options; 6 Instant Key 0 for details.

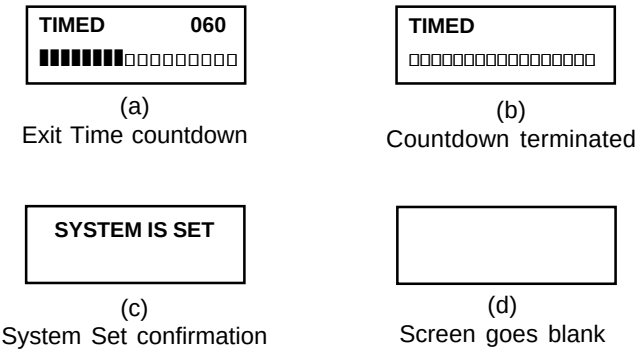


Figure 4.2 Setting Routine.

The following points should be noted:

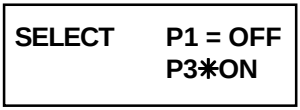
- If the code has all parts assigned then a full set takes place. This means that in the event of an alarm condition Bell, Strobe and Intruder outputs activate, the Galaxy 16 *plus*, if programmed, also signals to the ARC.

Note: The activation of the Bell, Strobe and Intruder outputs in part set mode is programmable. The Bell and Strobe outputs are enabled by default, the Intruder outputs (for part set) are disabled by default, for more information see Section 5: MENU OPTIONS; Option 6 – Parameters.

- If the code does not have all parts assigned, but those parts not assigned to the code are set, then performing a set results in a full set.
- If the code does not have all parts assigned, and those parts not assigned to the code are unset, then performing a set will **not** perform a full set. This is in effect a part set, setting of all parts assigned to the user code; for information on part sets see Part Setting the System (the B Key).

Part Setting the System (The B Key)

To part set the system the user must first enter their user code then press the B key. The keypad then displays the set status of those parts of the system assigned to the user code, see Figure 4.3 Part Set Selection.



Part Set selections for user code with Parts 1 and 3 assigned. Part 1 is unset, Part 3 provisionally programmed as set

Figure 4.3 Part Set Selection.

- Those parts that are ON are set, those that are OFF are unset.
- To alter the set/unset status of a part press the number corresponding to that part, that is, pressing the 1 key will toggle the set status of part 1 between set/unset.
- The equals sign indicates that what is displayed beside the part number is the current status of the part, that is, P1=ON denotes that part 1 is currently set. Pressing the 1 key will cause the display to read P1✳OFF, this indicates a transitional state where part 1 is provisionally programmed as unset.
- The actual set status of the part will not be altered until the ent key is pressed to accept the programming. The keypad then displays which parts are setting along with the part set exit-time countdown.
- At the end of the exit-time, or when the closing of a Final or Push-to-Set zone terminates the setting procedure, the Horn outputs and the keypad buzzers become silent for four seconds and the countdown blocks on the keypad display all clear. The keypad buzzers and horn outputs emit two long tones to confirm that the system is set. On the keypad the message SYSTEM IS SET appears briefly. The parts are now set and the display clears.

This sequence is illustrated in Figure 4.4 Part Setting Routine for Group 3 Only.

Note: If the Instant Key 0 option is used to terminate the setting then no conformation beeps are given. See Section 5: MENU OPTIONS: 6 – Parameters; 6 User Options; 6 Instant Key 0 for details.

The following points should be noted about Part Setting:

- If the user code has all parts assigned it can be used to set all parts, this is a full set of the system.
- If the user code does not have all parts assigned to it and the parts not assigned to it are set then the code can be used to full set the system.
- If the user code does not have all parts assigned to it and the parts not assigned to it are unset then the code can only be used to part set the system.

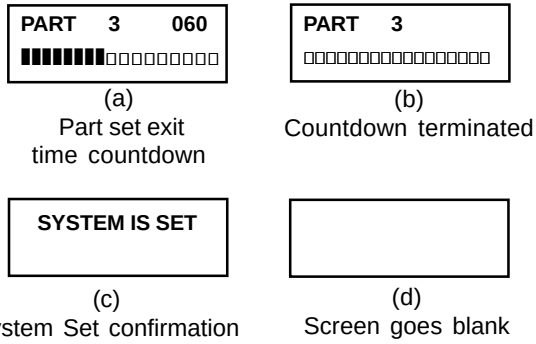


Figure 4.4 Part Setting Routine for Group 3 Only.

Interrupted Setting (Full or Part)

If the exit time countdown is interrupted by a zone opening then: the zone number, type and descriptor will be displayed; the Horn outputs will activate; and the keypad buzzers will beep rapidly until the zone is closed.

If the exit time countdown is interrupted by more than one zone opening then the keypad will display the number of zones open and prompt the user to view the zone number, type and descriptor using the A and B keys; the Horn outputs activate and the keypad buzzers beep rapidly until all zones are closed.

Closing all zones will cause the setting routine to restart.

See Figure 4.5 Interrupted Setting Messages.

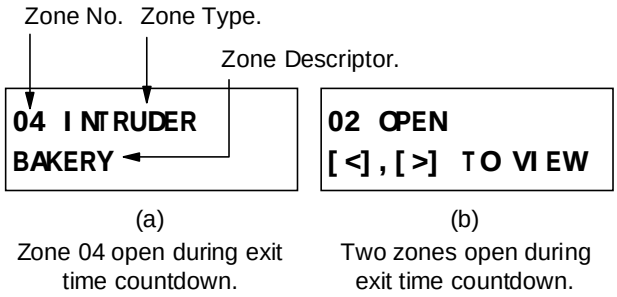


Figure 4.5 Interrupted Setting Messages.

Setting with Omitted Zones

The system may be set with zones omitted (bypassed), this means that those zones are not monitored during the set period and will not cause the system to go into alarm. For more information on omitting zones and setting with zones omitted see Section 5: Menu Options; Option 1 Omit.

Silent Setting

The 0 key can be programmed to act as a terminator for both the full and part setting procedures. This allows the setting to be initiated and terminated from a keypad. When the 0 key is used to terminate the setting, the Horn output and keypad buzzers emit exit tones but do not emit confirmation tones. The keypad briefly displays the message SYSTEM IS SET before the display clears.

Refer to Section 5: MENU OPTIONS; Option – 6 Parameters; 6 User Options; 6 Instant Key–0.

Cancelling the Setting

The full and part setting routines can be aborted by pressing the esc key during the exit time; this must be on the same keypad used to initiate the setting procedure.

Unsetting the System (Code + ent Key)

Only users with the Unset Access attribute enabled can fully or partly unset the system. Refer to Section 5: MENU OPTIONS; Option 4 – Codes.

To unset the system the user must enter their code then press ent. This unsets all parts assigned to the user.

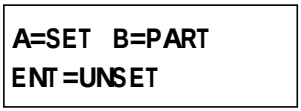


Figure 4.6 Unsetting Options.

Part Unsetting (Code + B Key)

A full or part set system can be part unset by entering the user code which displays the unsetting options, see Figure 4.6 Unsetting Options. To select part unset press the B key, the keypad displays the set status of those parts of the system assigned to the user code, see Figure 4.3 Part Set Selection.

- Those parts that are ON are set, those that are OFF are unset.
- To alter the set/unset status of a part press the number corresponding to that part, that is, pressing the 1 key will toggle the set status of part 1.
- The equals sign indicates that what is displayed beside the part number is the current status of the part, that is, P1=ON denotes that part 1 is currently set. Pressing the 1 key will cause the display to read P1*OFF, this indicates a transitional state where part 1 is provisionally programmed as unset.
- The parts will not unset until the ent key is pressed to accept the programming.

Engineer Unsetting

The engineer can **only** unset a system that was set using the engineer code. The engineer code can **not** be used to unset a system that was set by a user code.

Keyswitch Setting Options

Zones programmed as Keyswitch can be used to set and unset the system. The Keyswitch zone assumes the user attributes of one of user codes 1, 2 or 3 — the user code is assigned to the zone in Menu Option 7 – Zones. The Keyswitch zone, depending on the attributes of the user code assigned to it, can be used to: reset alarms; cancel alarms; full set and unset the system; part set and part unset the system; set only or unset only.

Refer to Section 5: MENU OPTIONS; Option 4 – Codes; Codes and Keyswitches and Option 7 – Zones; 4 Keyswitch.

Setting and Unsetting the System with a Keyswitch

A keyswitch with a latching operation, 1 kΩ to 2 kΩ to set, 2 kΩ to 1 kΩ to unset, can be used to set the system, see Section 1: System Architecture; Zones; Wiring Keyswitches.

The Keyswitch starts the setting procedure of each of the parts assigned to the assigned user code. At the end of the exit time, or when a Final or Push-to-Set zone terminates the setting procedure, the Horn output and the keypad buzzers become silent for four seconds, then emit two long tones to confirm that the system is set.

The transition from 2 kΩ to 1 kΩ unsets all parts assigned to a keyswitch with the unset attribute enabled.

Setting Features

Exit Time

Once the setting routine starts, the keypad buzzers and control panel entry/exit horns (if fitted) emit a continuous tone. When the system setting routine is initiated from the keypad, the display indicates the time remaining, in seconds, before the system sets.

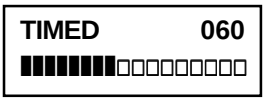


Figure 4.7 Exit Time.

Omitted Zones

If any zones are omitted when the system starts setting, this is indicated on the keypad. The keypad indicates how many zones are omitted.

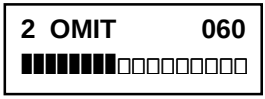


Figure 4.8 Omitted Zones.

Expiry Warning

During the last 25% of the programmed exit time the keypad buzzers and entry/exit horns begin to pulse rapidly, indicating that time is running short.

Entry Time

The system begins the unsetting routine whenever a Final or Entry zone activates. The keypad buzzers and Entry/Exit horns pulse slowly indicating that the entry time countdown has started. The user must go directly to the keypad, using the agreed entry route, and unset the system before the entry time expires. When 75% of the entry time has elapsed the keypad buzzers and Entry/Exit horns pulse rapidly, indicating that time is running short.

Entry Time-Out

The default operation for the entry time expiring before a valid user code is entered is that a full alarm occurs. This can be altered by programming an Abort time, for more information see Section 5: MENU OPTIONS; Option 6 – Parameters; 06 User Options; Abort and Star Abort.

Straying From the Entry Route

The default operation for a user straying from the agreed entry route and activates a zone in a protected area during the entry routine is that a full alarm occurs. This can be altered by programming an Abort time, for more information see Section 5: MENU OPTIONS; Option 6 – Parameters; 06 User Options; Abort and Star Abort.

Power Failures while the System is Set

If there is a power failure (both a.c. mains and stand-by battery) then when power is restored to the system the system attempts to return to the set status, full or part, that it was in prior to the power failure.

The system begins the setting procedure. If there are no unomitted zones open the panel starts a 20 second exit time at the end of which the appropriate (previously set) parts re-arm.

Note: If any unomitted zones are open then the system attempts to re-arm but will be unable to do so until all unomitted zones in the appropriate (previously set) parts are closed.

Section 5: MENU OPTIONS

General

The Galaxy 16 and 16 *plus* provide various menu options for modifying the functional performance of the system.

The Galaxy 16 and 16 *plus* allow multi-user access. All the keypads (a maximum of three) can be used to simultaneously carry out operations on the system.

Only valid codes can access the Galaxy menu options. Options 5 to 11 can only be accessed by the engineer with the following exceptions:

- Menu Option 5 – Test; the Manager Code can perform a test on the Bells and Strobe outputs.
- Menu Option 9 – Log; can be accessed by the Manager Code.
- Menu Option 10 – Time; can be accessed by the Manager Code.

Menu Option No.		Engineer Access	Manager Access	User Access
1	Omit	Yes	Yes	Yes
2	Chime	Yes	Yes	Yes
3	Walk	Yes	Yes	Yes
4	Codes	Yes	Yes	Programmable
5	Test	Yes	Yes	No
6	Parameters	Yes	No	No
7	Zones	Yes	No	No
8	Outputs	Yes	No	No
9	Log	Yes	Yes	No
10	Time	Yes	Yes	No
11	Text	Yes	No	No
12	Communications 1	Yes	No	No
13	Communications 2	Yes	No	No

Table 5.1 Menu Options and User Accessibility.

Engineer Mode

To program the Galaxy 16 and 16 *plus* the system must be in Engineer Mode. This allows access to all Engineer menu options. To access Engineer Mode, enter the four digit Engineer Code twice. On entry of the last digit a tamper alarm activates. The second entry of the code cancels this alarm and puts the system into Engineer Mode, see Figure 5.1 Entering Engineer Mode.

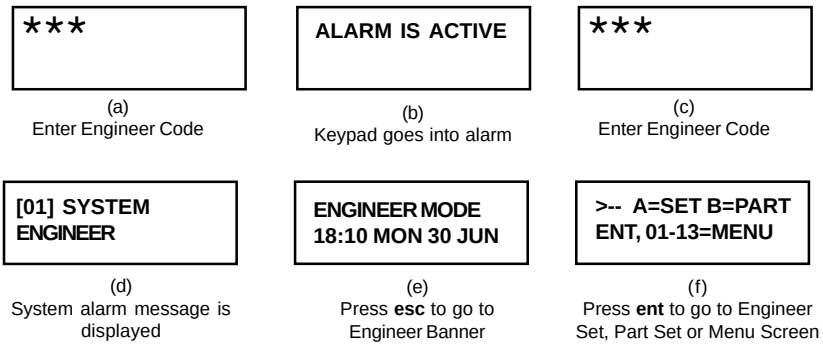


Figure 5.1 Entering Engineer Mode.

Menu Access

There are two methods of selecting menu options: Direct Access (using keys 0-9) and Menu Driven Access (using the ent key followed by the A, B or number keys).

Direct Access

Pressing a valid option number immediately after entering the code selects that option for programming without having to enter the menu. If the engineer is in the menu, entering an option number immediately selects that option. Once the selected menu option has been programmed, the engineer returns to the previous level of access (menu or Engineer Mode banner). This is illustrated in Figure 5.2 Direct Menu Access.

Example: Direct access selection of Option 6, Parameters from the Engineer Banner.

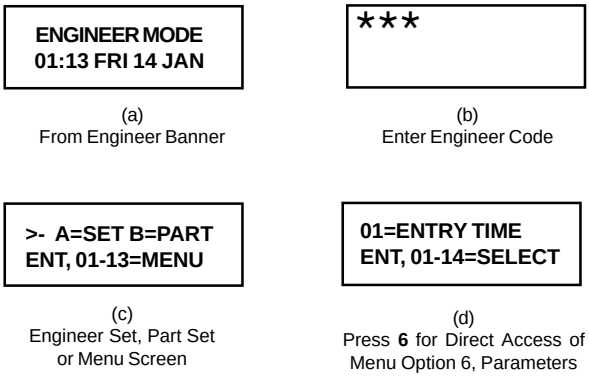


Figure 5.2 Direct Menu Access.

Note: Option 1, Omit is selected by entering 01 when using direct access. Options 2 – 9 are selected by entering either a single or double digit number (2 or 02), options 10 – 13 by entering a double digit number (10, 11, 12, 13).

Menu Driven Access

Menu driven access allows the engineer (and users) to enter and remain in the Galaxy 16/16 *plus* menu, following entry of their code, until the programming of the required menu options is completed. This is illustrated in Figure 5.3 Menu Driven Access.

Example: Menu driven access selection of Option 6, Parameters from the Engineer Banner.

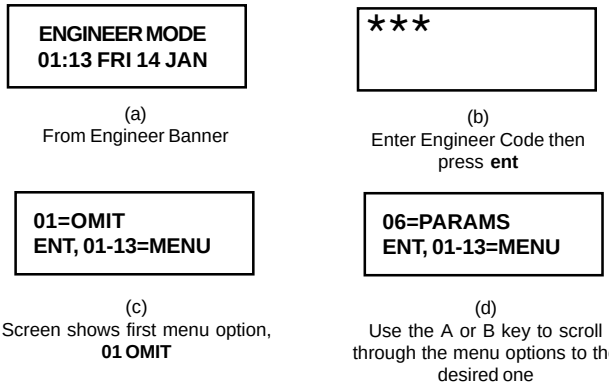


Figure 5.3 Menu Driven Access.

Option 1 - Omit

Engineer Function

The engineer uses the Omit option to enable the zones that can be omitted by the user.

Note: The Engijneer Code can **not** omit zones, however it can be used to set the system where zones have been previously omitted by a User code.

On selecting the Omit option, the omittable status of zone 01 is displayed. A zone will be omittable when the square next to the zone number is black and OMITTABLE appears on the bottom line of the display. press the # key or the corresponding zone number keys (01 - 16) to toggle the omittable status of the zone. Press the **A** or **B** key to view and select other zones.

Press the **esc** key to cancel the programming or **ent** to accept the selection.

User Function

The Omit option allows authorised users (see **Option 4 - Codes**) to set the system with eligible zones omitted from the system, or to omit zones from the system without setting. Omitted zones are reinstated automatically when the system is unset or manually when the omit feature is disabled on the zones.

When the Omit option is selected zone 01is displayed along with its omit eligibility and status:

- If the bottom line reads NON OMITTABLE then the zone can not be omitted, see Figure 5.4 (b).
- If the top line shows a hollow square and the bottom line reads #,xx=OMIT, where xx is the zone number, then the zone can be omitted, see Figure 5.4 (a).
- If the top line shows a hollow square and the bottom line reads OMIT then the zone has been omitted, see Figure 5.4 (c).

If the zone is omittable pressing the # key or the corresponding zone number keys (01-16) toggles the omit status of the zone, the display indicates the omit status. Press the **A** or **B** key to to view and select other zones.

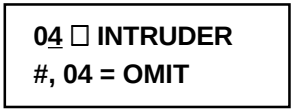
Note: A zone is omitted from the system as soon as it is selected.

Pressing esc saves the Omit programming allowing the system to be set with the omitted zones at a later time.

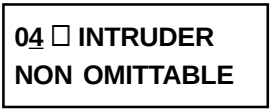
Pressing ent initiates the setting with the selected zones omitted.

Normal Setting With Omitted Zones

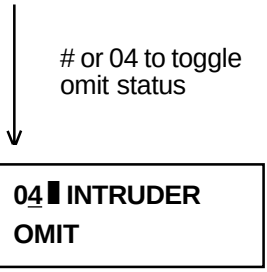
If zones have previously been omitted from the system, then, when the system is set the omitted zones are bypassed. Set the system as normal, see Section 4: Setting Options; the system starts to set and the display indicates how many zones have been omitted. The zones remain omitted until the system is unset.



(a) Zone 04 omittable but unomitted



(b) Zone 04 non-omittable



(c) Zone 04 omittable and omitted

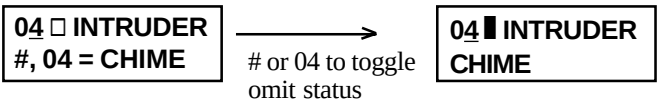
Option 2 Chime

The engineer function and user function of this menu option are identical. The Chime option is used to select which zones are to operate in chime mode. Any zone that is programmed to chime momentarily activates the horn output on the panel and the keypad buzzers when opened. The chime emitted from the horn is two-tone and operates on low volume.

When the Chime option is selected zone 01 is displayed along with its chime status. The Chime status on a zone is disabled if the top line of the keypad display shows a hollow square next to the zone number and the bottom line reads
#, xx = OMIT,where xx is the zone number.The Chime status on a zone is enabled if the top line shows a filled square and CHIME appears on the bottom line of the display. This is illustrated in **Figure 5.5** Chime Statuses.

Press the **#** key or the corresponding zone number keys (01 - 16) to toggle the chime status of the zone. Press the **A** or **B** key to view and select other zones. All zones default to Chime disabled.

Once the Chime status has been programmed on the required zones press the **ent** key to accept the selection or **esc** to cancel.



(a) Zone 04 Chime disabled (b) Zone 04 Chime enabled

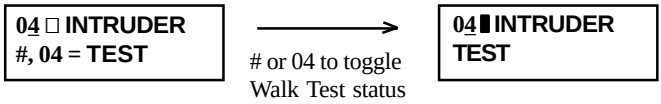
Figure 5.5 Chime Statuses

Option 3 - Walk

The engineer function and user function of this option are identical. The Walk option is used to walk test selected zones on the system.

When the Walk option is selected zone 01 is displayed. All zones default to disabled (excluded from the walk test), when a zone is disabled from the walk test the top line of the keypad display shows a hollow square next to the zone number and the bottom line reads #, xx = TEST, where xx is the zone number. A zone is included in the walk test when a filled square appears next to the zone number and TEST appears on the bottom line of the display. This is illustrated in **Figure 5.6** Walk Statuses.

Press the **A** or **B** key to view and select other zones. Pressing the zone number keys (01 - 16) directly toggles the test status of the corresponding zones. Once the desired zones have been selected press **ent** to exit the menu option and start the test or **esc** to exit and cancel the test.



(a) Zone 04 Walk Test disabled (b) Zone 04 Walk Test enabled

Figure 5.6 Walk Statuses

All zones are eligible for inclusion in the walk test.

During the test the circuit response (debounce) time is reduced to 50 ms, on all zones included in the Walk test, for the duration of the test, to facilitate the detection of loose connections or damaged wiring. When the zones to be tested have been selected, press the **ent** key to start the Walk Test. The keypad immediately displays how many of the currently selected zones are open. Each zone tested activates the keypad buzzers and horn output on the panel and is recorded in the event log.

When the Walk test is complete the keypad displays how many of the selected zones are currently open.

Press the # key to display how many of the selected zones were registered as tested, the **A** or **B** key can be used to scroll through the zone details (Descripter, number and zone type.

Pressing the hash key again displays all the zones that were registered during the test.

Note: Zones 10 to 16 are labelled A to G.

The Walk option can be manually terminated by pressing the **esc** key. The Walk test automatically terminates if all the selected zones remain inactive for 20 minutes.

Note: The zones can also be tested using the Soak test option. See Menu Option **7 - Zones; Zones and Soak Test.**

Option 4 – Codes

On the Galaxy 16 and 16 *plus* there are 14 User Codes, including the Manager Code. There is also one Engineer Code. The codes assigned to all users must have four digits.

There are two default codes on the Galaxy 16 and 16 *plus* panels as shown in Table 5.2 Default Codes.

Default Codes	
Manager Code (Usr 14)	1234
Engineer Code (Usr 15)	1122

Table 5.2 Default Codes.

User Function

The user function of the Codes option is to assign, modify and delete the codes and modify the code attributes of the system users. Only users with the Modify Codes attribute enabled can carry out these functions, the Manager Code always has the Modify Codes attribute enabled.

The Manager Code can modify the Manager Code and assign, modify and delete all other user codes. No other user can modify the Manager Code. The Manager Code cannot be deleted from the system.

Users with the Modify Codes attribute enabled can assign, modify and delete user codes (except the Manager Code).

Engineer Code Access

The engineer has restricted access to the Galaxy.

The Engineer Code:

- Cannot unset the system unless it was previously used to set the system.
- Cannot gain access to a set system (full or part). A user code must fully unset the system first.
- Cannot cancel alarms unless it was previously used to set the system. A user code must first be entered.
- Causes a tamper alarm on the first entry from the unset mode. A second entry cancels the alarm.
- Puts the system into Engineer Mode. Zone and module tampers are disabled while Engineer Mode is accessed.

The engineer function of the Codes option is to assign user attributes to the User Codes. The code attributes are shown, with their defaults, in Table 5.3 User Code Attributes.

Note: Only the engineer can modify the Resets attribute of the codes.

The engineer can only modify the Engineer Code. No other user can modify the Engineer Code. The Engineer Code cannot be deleted from the system.

Programming Codes and Code Attributes

Assigning and Changing Codes

When the Codes option is selected, USR 1 CODE is displayed. If there is no code assigned to this user, the square in the top right corner of the display is hollow.

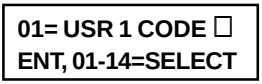


Figure 5.7 Unassigned User Code.

Press the ent key to select this user or the A or B keys to view the other users, then press ent to select.

To programme a new code, or change an existing one, enter a unique four digit code. The digits appear on the top row of the display as they are entered. If a wrong key is pressed the * key can be used to delete the last digit entered.

Press the ent key to save the programming and return to the 0X=USR X CODE display. The square in the top right corner of the display is black, indicating that a code is assigned to the user. To cancel the programming press the esc key.

Figure 5.8 Assigned User Code.

Note: If the code entered has already been assigned to another user the message DUPLICATED CODE is displayed; the code entered is not assigned to the selected user.

Deleting Codes

Select the user code to be deleted and press the ent key. The keypad displays four stars.

Pressing the * key four times deletes the currently programmed user code. The display changes to – – – –, press the ent key to save the programming and return to the user code menu option or esc to cancel. The square in the top right corner of the display is hollow, indicating that the User Code has been deleted, see Figure 5.8 Unassigned User Code. To cancel the code programming press the esc key.

This is illustrated in Figure 5.9 Deleting a User Code.

Note: This does not default the user code attributes.

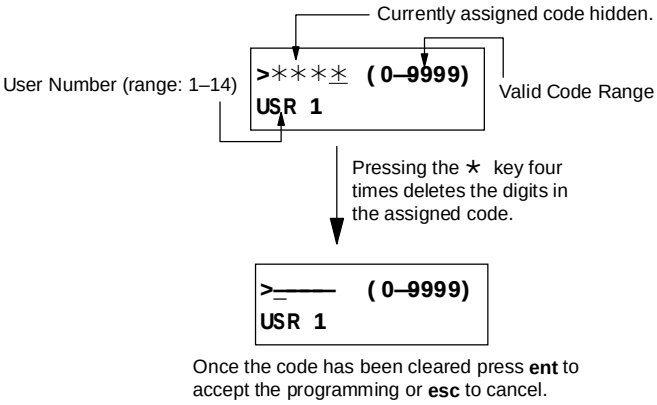
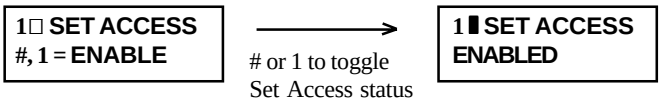

Currently assigned code hidden.
User Number (range: 1–14)
>✳✳✳✳ (0–9999)
USR 1
Valid Code Range
Pressing the ✳ key four times deletes the digits in the assigned code.
>_ (0–9999)
USR 1
Once the code has been cleared press ent to accept the programming or esc to cancel.

Figure 5.9 Deleting a User Code.

Programming Codes Attributes

When the Codes option is selected, USR 1 is displayed, press the A or B keys to view other users. Press ent to select the required user then press the # key to access the code attributes— (user instruction only, the engineer cannot carry out this operation).

The Set Access attribute is displayed along with its status. An attribute is enabled when the square next to the attribute number is black and ENABLE appears on the bottom line of the display. To toggle the status of an attribute press the # key. Press the A, B and # key to view and modify other attributes.



(a) Set Access disabled (b) Set Access enabled

Figure 5.10 Set Access Statuses.

Note: Pressing the attribute number key, (1 – 8 for the engineer, 1 – 7 for users), directly toggles the enable status of the corresponding attributes.

When the required attributes have been assigned to the user, press the ent key to save the selection or esc to cancel.

The display returns to the selected user number. Press the A or B key to view the other users. To exit from the Codes option press the esc key.

Table 5.3 User Code Attributes lists the available Code Attributes and defaults.

No.	Attribute	Description	Default
1	Set Access	Enables the user to Full Set or Part Set the system.	Enabled.
2	Unset Access	Enables the user to Unset or Part Unset the system.	Enabled.
3	Part 1 Access	Enables user to set/unset Part 1.	Enabled.
4	Part 2 Access	Enables user to set/unset Part 2.	Enabled.
5	Part 3 Access	Enables user to set/unset Part 3.	Enabled.
6	Omitting	Enables user to omit omittable zones.	Enabled.
7	Modify Codes	Enables user to program User Codes and attributes.	Users Disabled, Mgr. Enabled.
8	Resets†	Enables user to reset authorised alarm activations, refer to Option 6 – Parameters; 07 Resets.	Enabled.
† This attribute programmable with Engineer Code only.			

Table 5.3 User Code Attributes.

Log Code

A code can be made to log every time it is entered by disabling all the code attributes. A log code will have access to menu options 2 (Chime) and 3 (Walk). Every entry of the code will be recorded in the event log.

Codes and Keyswitches

Any zones programmed as Keyswitch must be assigned the attributes of User 1, 2 or 3. The Keyswitch zone then has the Set/Unset and Reset capabilities of that user code, therefore:

- If the Keyswitch is to be used to set or unset the system it must be assigned to a code with the Set Access and Unset Access attributes enabled.
- If the Keyswitch is to be used to perform a Part set or unset it must be assigned to a code with the appropriate part attributes enabled (Part 1 Access, Part 2 Access and Part 3 Access).
- If the code is to be used to reset alarms it must be assigned to a code with the Resets attribute programmed accordingly, see 6 – Parameters; 07 Reset.

The Keyswitch assumes the assigned attributes of the user even if the user has not been allocated a code (PIN).

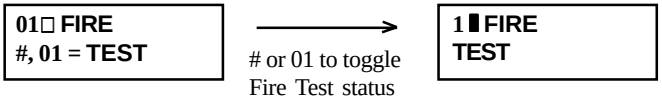
For information on assigning a Keyswitch zone to a User Code see Option 7 – Zones; 4 Keyswitch.

Option 5 – Test

This test is only available in full for the Engineer Code, the Manager Code also has limited access, all other User Codes have no access, see Table 5.4 Test Outputs.

This option allows the output devices connected to the system to be tested. Outputs are tested by function. When 5=Bells is selected for test, all outputs programmed as Bells activate. Refer to Option 8 – Outputs for details on the programming of the outputs.

When the Test option is selected by the engineer, test 01 FIRE is displayed. Press the A or B key to move to the required test. To test the programmed outputs, press the # key. Outputs programmed to the corresponding function are switched on. To end the test, press the # key; the tested outputs switch off. Use the A or B key to select another test.



(a) Fire Outputs Test disabled (b) Fire Outputs Test enabled

Figure 5.9 Fire Output Test Statuses.

Note: Pressing the test number key (2 – 9) directly starts the test of the corresponding outputs. Press 01 to test the Fire output, 10 to test the Confirm output and 11 to test the Medical output.

To exit from the Test option press the esc key.

The Test option automatically terminates if a test is allowed to run for two minutes or if no tests are selected within two minutes of the last key-press.

Output Type	Test No.
Fire	01
PA	02
Intruder	03
Set	04
Bells†	05
Strobe†	06
Switch DC	07
Security	08
Confirm	09
Horn	10
Medical	11
AC Fail	12
Link A	13
Link B	14
Batt Low	15
Tamper	16
Zone Omit	17
† Mgr code has access to test.	

Table 5.4 Test Outputs.

Option 6 – Parameters

The Parameters option allows the engineer to modify the system parameters.

Menu Option	Selection	Selection	Default
06 Parameters	01 Entry Time	0 – 900	120 s
	02 Exit Time	0 – 899 s (900=Infinite)	120 s
	03 Bell Time	0 – 1200 s (1200=infinite)	1200 s
	04 Re-arm Mode	0 Disabled	Default
		1 Omit Open	
		2 Inf. Strobe, Open	
		3 Omit Active	
		4 Inf. Strobe, Active	
	05 No. Re-arms	0 – 4 (4 = infinite).	4
	06 User Options	01 Quick Set	Disabled
		02 Quick Part	Disabled
		03 Part Bells	Enabled
		04 Part Intruder	Disabled
		05 PA Delay	Disabled
		06 Instant Key 0	Disabled
		07 Abort Time	Disabled
		08 Part Set	Disabled
		09 Line Fail High (Galaxy 16 only) 09 Sig Log Full (Galaxy 16+ only)	Disabled Disabled
		10 Reset Mgr. Code	Disabled
		11 Part Silent	Disabled
		12 AC Fail Delay	Disabled
		13 Zone Restoral	Disabled
		14 User 13 Duress	Disabled
		15 Remote Set (Galaxy 16 + only)	Disabled

Table 5.5 System Parameters, 1 to 6.

Menu Option	Selection	Selection	Default
06 Parameters (continued)	07 Reset	1 Intruder	Disabled
		2 PA	Disabled
		3 Tamper	Disabled
		4 Confirm	Enable
	08 Bell Delay	0 – 900 s	000
	09 Cold Start	**ent = lose data!**	
	10 Remote Reset	0 = On 1 = Off	0 = Off
	11 Remote Version	0 – 255	0
	12 Banner Top	Blank = Panel type and software version.	
	13 Banner Bottom	Blank = Time, day and date.	
	14 Part Exit Time	0 – 900	120 s
	15 Confirm Time	0 – 99	60 m

Table 5.6 System Parameters, 7 to 15.

Selecting and Modifying Parameters

When the Parameters option is selected parameter 01 Entry Time is displayed, the A and B keys can be used to view the other parameters. When the required parameter is displayed press the ent key to select it.

On selecting the required parameter, the current setting is displayed. The parameter is programmed either by entering a value within the allowed range or pressing the # key to toggle the status of the option, pressing the ent key saves the selection. To exit the Parameters option or cancel the programming press the esc key.

Any variations to this procedure are detailed in the description of the parameter.

01 Entry Time

This parameter determines the Entry Time allowed to users when unsetting the system. The default is 120 seconds with a programmable range of 0 to 900 seconds (15 minutes).

Note: The Entry Time programming affects all parts. The Entry Time cannot be uniquely programmed for individual parts.

02 Exit Time

This parameter determines the time users have to exit the premises or selected part during timed setting of the system. The default is 120 seconds with a programmable range of 0 to 900 seconds (15 minutes). Entering a value of 900 seconds sets the exit time to infinity.

Note: The Exit Time programming affects all parts. The Exit Time cannot be uniquely programmed for individual parts.

03 Bell Time

This is the duration that outputs programmed as bells are activated for if there is an alarm. The default is 1200 seconds (20 minutes) with a programmable range of 0 to 1230 seconds. Entering a value of 1230 seconds sets the Bell Time to infinity.

04 Re-arm Mode

This parameter determines which zones are omitted and the status of the strobe outputs when the system automatically re-arms following an alarm activation.

For the system to re-arm the zones that are open at the end of the programmed Bell Time **must** be omittable — refer to Option 1 Omit. If an open zone is non-omittable then the system cannot re-arm.

The zone(s) which caused the alarm (Active zones) must also be omittable for the system to re-arm, regardless of whether the zones are closed at the end of the Bell Time or not.

Note: After an alarm, if the system is not re-armed, the keypad Exit/Entry horns activate when the user enters the premises by an Entry or Final zone.

Option		Zones Omitted	Strobe Status	Default
0	Disabled	Re-arm disabled		
1	Omit Open	Open Zones	Re–arms	
2	Inf.Strobe,OP.	Open Zones	Continuous	
3	Omit Active	Activated Zones	Re–arms	✓
4	Inf.Strobe,ACT	Activated Zones	Continuous	

Table 5.7 Re-arm Mode.

Note: If the re-arm mode is between 1 and 4, ensure that parameter 05 Number of Re-arms is **not** set to zero.

05 Number of Re-arms

This parameter determines the number of alarm activations that are followed by an automatic system re-arm. The default setting is continuous re-arms (4) with a programmable range of zero to three (0 – 4).

Note: If parameter 04 Re-arms is disabled, the system does not re-arm following an alarm activation.

06 User Options

This parameter is used to determine the system features outlined in Table 5.8 User Options.

When the User Options parameter is selected, option 1 QUICK SET is displayed, along with its enable status. Press the # key or the corresponding option number key to toggle the enable status of the user option. The option is enabled when the square next to the user option number is black and Enable appears on the bottom line of the display. Press the A or B key to view and select other user options.

Option	Default
01 Quick Set	Disabled
02 Quick Part	Disabled
03 Part Bells	Enabled
04 Part Intuder	Disabled
05 PA Delay	Disabled
06 Instant Key 0	Disabled
07 Abort time	Disabled
08 Part Set	Disabled
09 Line Fail High‡	Disabled
09 Sig Log Full†	Disabled
10 Reset Mgr	Disabled
11 Part Silent	Disabled
12 AC Fail Delay	Disabled
13 Zone Restoral	Disabled
14 Usr 13 Duress	Disabled
15 Rem When Set	Disabled
‡Galaxy 16 only. †Galaxy 16 *plus* only.	

Table 5.8 User Options.

Note: Option 1, Quick Set is selected by entering 01 when using direct access. Options 2–9 are selected by entering either a single or double digit number (2 or 02), options 10–13 by entering a double digit number (10, 11, 12, 13).

When the required user options have been assigned, press the ent key to save the selection.

01 Quick Set

When enabled this option allows the user to Full Set the system with one push of the A key (no code required).

Note: Only works from the Day Banner or Engineer Banner.

02 Quick Part

When enabled this option allows the user to Part Set the system with one push of the B key (no code required).

Note: Only works from the Day banner or Engineer banner.

03 Part Bells

When enabled this parameter will activate Bell and Strobe outputs if an alarm condition occurs when the system is Part Set.

04 Part Intruder
When enabled this parameter will activate Intruder outputs if an alarm condition occurs when the system is Part Set.

05 PA Delay
When enabled this parameter delays the activation of PA outputs, after the activation of a PA or PA Silent zone, by 30 seconds.

Note: This does not affect star key PA operation (*2).

06 Instant Key 0
When enabled key 0 on the keypad will act as a Push-to-Set button. See Section 4: SETTING OPTIONS; Silent Setting.

07 Abort and Star Abort
Normally when the Intruder reset parameter is Enabled only a valid code with the Reset parameter enabled may reset an Intruder alarm. The Abort/Star Abort feature allows users, without the Reset feature on their code enabled, to cancel and reset an Intruder alarm under certain conditions. The Abort feature has two modes of operation: Abort and Star Abort, these are outlined below.

When programming the Abort parameter pressing the * key toggles between Abort and Star Abort, pressing the # key enables/disables the Abort feature.

The Abort parameter is, by default, disabled. Enabling the Abort feature defaults to Star Abort mode. Press ent to accept the programming or esc to cancel.

Notes: The Abort/Star Abort feature only affects the system if the Intruder Reset parameter is enabled, see Section 5: MENU OPTIONS; 6 – Parameters; 07 Reset; 1 Intruder.

The Abort/Star Abort feature does not operate when an Intruder alarm is caused when the system is set. The system must first be unsetting.

The Abort time is fixed at 90 seconds.

Abort Time
When enabled the Abort feature gives a 90 second time period during which **any** user code (regardless of whether it has the Intruder Reset attribute enabled or not) may reset an Intruder alarm.

- If an Entry Time-out occurs or if the user(s) stray from the Entry Route and cause an Intruder alarm then the Bell, Strobe and Intruder outputs all activate.
- Entering **any** valid user code, within the Abort Time (90 s) cancels the activation of the Bell, Strobe and Intruder outputs.

After the Abort Time has elapsed a code without the Intruder Reset attribute enabled will cancel the Bell and Strobe outputs but the Intruder outputs will not be deactivated. The system requires to be reset by entering a code with the valid reset attributes enabled. If Remote Reset is enabled the system prompts for a Technistore code.

Note: If the Intruder Reset attribute (Menu option 06 Perimeters; 07 Reset; 1 Intruder) is disabled then any code may reset the system after an Intruder alarm at any time).

Star Abort
When enabled, the Star Abort provides a time period during which any user (with or without the Reset parameter enabled) may prevent an Intruder alarm. This will last until the end of the untry time.

- If a user strays from the Entry route and causes an alarm then the Bell and Strobe outputs (but not Intruder) activate.
- If no valid code has been entered when the Entry Time or Star Abort Time (whichever is shortest) has expired then the Intruder outputs activate.
- Once the Star Abort Time or Entry Time (whichever is shortest) has elapsed then a valid user code with the Resets attribute enabled is required to reset the system and deactivate the Intruder output.

Note: If the Intruder Reset attribute (Menu option 6 – Parameters; 07 Reset; 1 Intruder) is disabled then any code may reset the system after an Intruder alarm at any time).

08 Part Set
When the Part Set attribute is disabled then Exit/Entry zones act as Entry Time countdown initiators when the system is Part Set. If enabled then Exit/Entry zones will as Intruder zones when the system is Part Set.

The Exit/Entry zones always act as Intruder zones when the system is Full Set.

The Part Set attribute also affects the operation of the Set output type. When disabled (default) the Set outputs do not activate when the system is Part Set. When enabled the Set outputs activate when the system is Part Set. The Set outputs always activate when the system is Full Set (all three parts are set).

09 Line Fail High (Galaxy 16 only)
This option determines the condition that activates the line fail zone. When disabled, it will activate on a high to low transition.

09 Sig. Log Full (Galaxy 16 *plus* only)
Signals that Log is 90% full. This will also be signalled via SIA format communications (if in use).

10 Reset Manager
Resets the Manager Code (Usr 14) to default (1234). Pressing the # key enables this option (denoted by the box being filled). The Manager Code will not reset until the ent key is pressed while this option is enabled. This option automatically resets to disabled once it has been executed.

11 Part Silent
When enabled this will silence the keypad horns and Horn type outputs during a Part Set.

12 AC Fail Delay

When enabled there is a 10 minute delay between the occurrence of an a.c. mains failure and activation of the AC Fail outputs. If the a.c. mains is restored before output activation then no output activation occurs. This avoids signalling of false or short term a.c. mains failures.

13 Zone Restoral

When enabled this attribute records the closing (–) of Exit, Intruder and Dual zones in the Event Log. This will also signal these events via SIA communications format.

14 User 13 Duress

When enabled this attribute assigns a Duress function to User Code 13. Entry of this code will cause a Duress alarm which activates the PA outputs (but not Horn, Intruder, Bell, Strobe).

15 Rem When Set

When disabled (default) this function restricts remote access to when the system is unset.

When the system is either Set, or Part-set, then remote or local servicing by Galaxy Gold via a Telecoms module or an RS232 is inhibited until such time as the system becomes fully Unset. If the system is set and the engineer tries to dial into the site, a connection is still made but once the connection is made the Galaxy Gold keypad display is blank and pressing keys on the Galaxy Gold keypad has no effect. The Galaxy Gold keypad remains in this inactive state until the system is fully Unset. If the system is Full-set or Part-set while the engineer is connected to the site, the Galaxy Gold keypad becomes inactive until the system is fully unset. The engineer may, at any time during the Galaxy Gold Keypad inactivity, terminate the connection to the system using the pull-down menu (Connect/Hang-up).

When enabled this function allows Remote servicing even when the system is Set.

07 Reset

This parameter is used to determine which alarms require a system reset.

There are four reset types:

- When the Intruder and PA reset parameters are enabled they can be reset by a user code with the Code Reset attribute enabled or the Engineer Code (Usr 15). Disabling this parameter means that any code can reset an Intruder or PA activation.
- When the Tamper reset parameter is enabled it requires to be reset by the Engineer Code (Usr 15). Disabling this allows it to be reset by a user code with the Code Reset parameter enabled.

Option	Alarm Type	Reset Paramater	Alarm Reset By...	Default
1	Intruder	Enabled	User with Code Reset enabled or Eng Code.	Disabled
		Disabled	Any valid code.	
2	PA	Enabled	User with Code Reset enabled or Eng Code.	Enabled
		Disabled	Any valid code.	
3	Tamper	Enabled	Engineer only.	Enabled
		Disabled	User with Code Reset enabled or Eng Code.	
4	Confirm	Enabled	User with Code Reset enabled or Eng Code.	Enabled
		Disabled	Any valid code.	

Table 5.9 System Reset Default Settings.

When the Reset parameter is selected alarm type 1 INTRUDER is displayed along with its reset status. Press the # key or the corresponding number key to toggle the enable status of the alarm type. The alarm type requires a system reset when the square next to the user option number is black and ENABLE appears on the bottom line of the display. Press the A or B key to view and select other reset options.

When the Confirm reset parameter is selected it operates in the same way as Intruder Reset parameter but controls the response to Confirmed intruder alarms only, as opposed to all (unconfirmed) intruder alarms.

When the required alarm types have been enabled for system reset, press the ent key to save the selection, or esc to cancel.

08 Bell Delay

This parameter allows the activation of the bell to be delayed following an alarm condition. The default is 000 seconds (instant Bells) with a programmable range of 0 to 900 seconds (0 to 15 minutes). Intruder and Confirm outputs are active during the bell delay.

Note: PA and Fire zone activations override the Bell Delay. Any alarm activation during a Line Fail condition also overrides the Bell Delay.

09 Cold Start

This parameter allows the engineer to delete the system programming and return all options on the control panel to the default settings.

On selecting this option a warning message appears on the keypad display, see Figure 5.12 Cold Start Warning Message.

Figure 5.12 Cold Start Warning Message.

To cancel the cold start press the esc key.

To delete the system programming press the ent key. The warning message remains on the keypad for a few seconds then returns to the normal unset mode banner. The system is now at the default settings for all options.

10 Remote Reset

This parameter allows the Remote Reset facility to be switched on and off.

Press key 1 = On or 0 = Off. The default setting is 0 = OFF.

The Galaxy 16/16 *plus* operates with the Technistore remote reset facility. After an alarm occurs with the Remote Reset enabled, the user cannot reset the system until the correct Technistore code is entered. A random five digit number is generated by the control panel and displayed on the keypad. This number must be quoted to the Monitoring Station. The Monitoring Station returns the decoded Technistore reset number that resets the system when entered at the keypad.

Notes: The Engineer Code can be used to reset the system. Entering, then exiting, Engineer Mode returns the system to the Unset Banner.

This option is affected by 11 Remote Version.

If Remote Reset is enabled Tamper alarms always require to be reset by either the Engineer Code or a Technistore reset. The intruder and PA Reset parameters must be enabled for Intruder and PA alarms to require a Technistore reset, see 07 Reset.

11 Remote Version

This parameter determines the Monitoring Station decoder version (000 to 255) of the Technistore system. The Monitoring Station allocates the Remote Version number. The engineer assigns the allocated number to this parameter.

12 Banner Top

This parameter is used by the engineer to modify the top line of the keypad Unset Banner display.

On selecting Banner Top the current banner text appears on the top line of the display; if the top line is blank this means that the top line of the Unset Banner is set to default, that is, panel type and software version. On the bottom line a selection of the range of available alphanumeric characters are displayed; in the middle of the characters there is an underscore. Press the A or B keys to scroll through the alphanumeric characters. Pressing the ent key causes whichever character is above the underscore to be added to the line of text. Pressing the * key will erase characters from the line of text, one character per press. To accept whatever is displayed on the text line as the top line of the Unset Banner press the esc key.

Note: If the text line is blanked, then the top line of the Unset Banner displays the default text, that is, panel variant and software version.

13 Banner Bottom

This parameter is used by the engineer to modify the bottom line of the Unset Banner display.

On selecting Banner Bottom the current banner text appears on the top line of the display and a section of the available alphanumeric characters are displayed on the bottom line. The programming is the same as for Banner Top.

Note: If the bottom line is blank then the banner displays the default text, that is, time, day and date.

14 Part Exit Time

This parameter determines the time users have to exit the premises or selected part during timed Part Setting of the system. The default is 120 seconds with a programmable range of 0 to 900 seconds (15 minutes). Entering a value of 900 seconds sets the Exit Time to infinity.

15 Confirm Time

This parameter determines the window in which two unique zone activations can cause a sequentially confirmed alarm. If the confirm time expires, the intruder outputs reset and the confirm time will start again on the next zone activation.

Option 7 – Zones

This option is used by the engineer to modify the programming of the zones on the system and to assign the zones to one of the parts on the system part (P1, P2 or P3). The available zone functions are shown in Table 5.10.

Note: Each zone can only be assigned to a single part. All zones default to Part 1 (P1).

Modifying Zones

When the Zones option is selected, the function of Zone 01 is displayed along with the part that it is assigned to. Press the ent key to select this zone or press the A or B key to move to the required zone and then press the ent key. The zone function number and description are displayed. Press the A or B keys to select the required zone function.

To change the part assigned to the zone – or the code allocated to a Keyswitch zone – press the # key. This toggles between P1, P2 and P3 (or CD1, CD2 or CD3). For details on keyswitch zones and codes see Section 4: SETTING OPTIONS; Part Setting the System and Option 4 – Codes.

Press the ent key to save the programming. The A or B keys can then be used to select another zone. To exit from the Zones option press the esc key.

Note: Pressing the appropriate number key directly selects the corresponding zone or function.

ZONE		OUTPUTS ACTIVATED									
No.	Function	Fire	PA	Int.	Bell	Strb	Sw. dc	Sec'ty	Horn	L'k A	L'k B
01	Final								3		
02	Exit/Entry			3	3	3			3		
03	Intruder			3	3	3			3		
04	Keyswitch								3		
05	Fire†	3‡			3‡	3‡			3‡		
08	PA†		3‡		3‡	3‡			3‡		
09	PA Silent		3‡								
10	Dual			3	3	3			3		
11	Security			3	3	3‡	3‡	3	3		
13	Link A				§	§			§	3	
14	Link B				§	§			§		3

† Over–rides Bell Delay.
‡ Output activated in Set and Unset state.
§ Programmable option on Galaxy 16 *plus*.
Note: AC Fail, Batt Low, Confirm, Set, Medical and Tamper outputs not shown as there are not activated by any zone type. Entry, Push-to-Set and Spare zones do not activate any output types.

Table 5.10 Zone Types and Activated Outputs.

Zone Types

01 Final

This function terminates the timed setting procedure during a setting routine; it also starts the unsetting procedure of a set system. Opening and closing a Final zone during the Exit Time sets the system, providing all the (unomitted) zones are closed. Opening a Final zone when the system is set starts the Entry Time count-down.

The Final zone must be assigned to one of the parts to be set when part setting the system; or a Part that is already set when being used to initiate the unsetting of the system.

This zone type records the active (+) and restore (–) events in the log.

02 Exit/Entry

Once the unsetting procedure has been initiated (by the activation of a Final or Entry zone) zones programmed as Exit/Entry allow the user access to the keypad without causing an alarm**.** Exit/Entry zones function as Intruder zones when the system is Full Set.

The operation of Exit/Entry zones when the system is Part Set is dependant on the programming of the Part Set attribute, see Section 5: MENU OPTIONS; Option 6 – Parameters; 06 User Options; 08 Part Set. If the Part Set attribute is disabled then Exit/Entry zones act as Entry Time countdown initiators when the system is Part Set. If enabled then Exit/Entry zones act as Intruder zones when the system is Part Set. The Exit/Entry zones always act as Intruder zones when the system is Full Set.

This zone type normally records only the active (+) events in the log. If the Zone Restoral attribute has been enabled it records both the active (+) and restore (–) events in the log, see Menu Option 6 – Parameters; 06 User Options; 13 Zone Restoral.

03 Intruder

This zone is operational when the system is set. Activation of an Intruder zone causes a full alarm condition that requires to be reset with a code authorised for Intruder Reset. Refer to Section 5: MENU OPTIONS; Option 4 – Codes and Option 6 – Parameters; 07 Reset.

This zone type normally records only the active (+) events in the log, if the Zone Restoral attribute has been enabled it records both the active (+) and restore (–) events in the log, see Section 5: Menu Options; Option 6 – Parameters; 06 User Options; 13 Zone Restoral.

04 Keyswitch

The Keyswitch zone assumes the attributes of the User Code assigned to it (User Code 1, 2 or 3). Depending on the attributes enabled for this code, the Keyswitch zone can be used to perform the following to its allocated parts: Set, Unset and Resets. To change the code assigned to the zone, press the # key. This toggles between CD1, CD2 and CD3.

This zone type records the active (+) and restore (–) events in the log.

Note: Keyswitch zones programmed as codes 1, 2 and 3 are recorded in the Event Log (and transmitted via SIA communications) as users 18, 19 and 20 respectively. If the user codes options 1, 2 or 3, (Usr1 – Usr3) are assigned codes any entry of these codes will be recorded as Users 1 to 3.

For details on user code attributes refer to Section 5: MENU OPTIONS; Option 4 – Codes; Programming Codes and Code Attributes.

05 Fire

This zone type is continuously operational.

When activated, a Fire zone overrides the Bell Delay parameter. The keypad buzzer and control panel horn output, if fitted, emit an interrupted tone (one second on, 0.5 seconds off), easily distinguishable from all other alarm conditions. Any valid code entry cancels the fire activation.

This zone type records the active (+) events in the log.

06 Entry

The function of this zone type is to initiate the unsetting procedure on entering a set system. Activation of the zone starts the Entry Time. This zone type is used in conjunction with Push-to-Set systems.

07 Push Set

A Push-to-Set (Exit Terminator) zone is used to terminate the setting procedure of a system. When the system is set the zone has no other function. The Push-to-Set zone does not start the unsetting of a system.

08 PA

The PA (Personal Attack) function is continuously operational. Activation of this zone type overrides the Bell Delay parameter and causes an instant full alarm condition that requires to be reset with a code authorised for PA reset, see Section 5: MENU OPTIONS: Option 4 – Codes and Option 6 – Parameters; 07 Reset. This zone type records the active (+) events in the log.

Note: If a PA zone is open, it is indicated on the keypad whenever a valid code is entered. The part that the open PA is assigned to cannot be set.

PA Delay: If the PA Delay parameter is enabled, there is a 30 second delay between the activation of a PA zone and the alarm outputs firing. Resetting the PA button during the delay period aborts the alarm. See Section 5: MENU OPTIONS: Option 6 – Parameters; 06 User Options; 05 PA Delay.

09 PA Silent

The PA Silent zone operates in the same way as the PA zone except that there is no audible or visual indication of the activation; that is, no bells or strobes are activated. Only the remote communicator signals the alarm. This zone type records the active (+) events in the log.

If a PA Silent zone is open when one of the setting routines starts, it is indicated on the keypad display. The part that the open PA Silent zone is assigned to can not be set.

PA Delay: If the PA Delay parameter is enabled, there is a 30 second delay between the activation of a PA zone and the alarm outputs firing. Resetting the PA button during the delay period aborts the alarm. See Section 5: MENU OPTIONS: Option 6 – Parameters; 06 User Options; 05 PA Delay.

10 Dual

When the system is (Full) Set an alarm condition is generated if:

- Two Dual zone activations occur within a 20 minute period. These activations can occur on a single Dual zone or two separate Dual zones. A single Dual zone activation, unless followed by another Dual zone activation within a 20 minute period, will not cause an alarm and is not recorded in the Event Log.
- A single Dual zone remains active (2 kΩ) for the entire 20 minute period.

When the system is Part Set the above two cases only cause a Local Alarm to occur if the Part Bells and Part Intruder menu options are enabled, see Section 5: MENU OPTIONS; Option 6 – Parameters; 06 User Options; 03 Part Bells and 04 Part Intruder.

This zone type normally records only the active (+) events in the log after two Dual zone activations, if the Zone Restoral attribute has been enabled it will record both the active (+) and restore (–) events in the log, see Section 5: MENU OPTIONS; 6 – Parameters; 06 User Options; 13 Zone Restoral. The first and second activations of Dual zones record in the Log.

11 Security

This zone type is continuously operational.

When activated in the unset state, a Security zone causes a local alarm (keypad buzzers, control panel horn and Security outputs activate). This can be cancelled by any user code.

When the system is Part Set activation of a Security zone causes a local alarm to occur unless the Part Bells and Part Intruder menu options are enabled in which case a full alarm occurs, see Section 5: MENU OPTIONS; Option 6 – Parameters; 06 User Options.

Activation of a Security zone in the set state causes a full alarm condition that requires to be reset with a code authorised for Intruder Reset. Refer to Section 5: MENU OPTIONS; Option 4 – Codes and Option 6 – Parameters; 07 Reset.

This zone type records the active (+) and restore (–) events in the log.

12 Spare

This zone type has no function. The resistance value of Spare zones is not monitored even when the system is set however it is strongly recommended that spare zones have a 1kΩ resistor connected across the zone terminals. Activation of the Spare zone type does not record in the event log.

13 Link A

The Link A zone type is an engineer defined zone type. The programming of the Link A zone type is split into two parts: the SIA mnemonic programming option allows the engineer to assign a SIA code to the zone type; the Link Function programming option allows the engineer to assign a mode of operation to the zone type. The Link A mnemonics are given in Table 5.11 Link A SIA Mnemonic Programming Options. The Link A (and Link B zone type) Functional programming options are given in Table 5.12 Link A and Link B Functional Programming Options. The programming routine for programming a zone as a Link A (or Link B) type zone is illustrated in Figure 5.5 Link Zone Programming.

Link A SIA Mnemonics	SIA Codes	Meaning
None.	RO/RC	Relay Open/Relay Close
G	GA/GR	Gas Alarm/Gas Restore
K	KA/KR	Heat Alarm/Heat Restore
M	MA/MR	Medical Alarm/Medical Restore

Table 5.11 Link A SIA Mnemonic Programming Options.

Function	Link A/B Function	Programming
None	Normal	Zone opening activates Link A output types. This zone type records the active (+) events in the Log.
A	Alarm	Zone opening activates Link A, Bell, Strobe and Horn output types. Zone closing deactivates Link A outputs; Bell, Strobe and Horn outputs require a system reset. This zone type records the active (+) events in the Log.
S	(Full) Set	Zone opening, when the system is Full Set, activates Link A output types. This zone type records the active (+) events in the Log.
+	Alarm and Set	As for Alarm, but only when the system is Full Set. This zone type records the active (+) events in the Log.

Table 5.12 Link A and Link B Functional Programming Options.

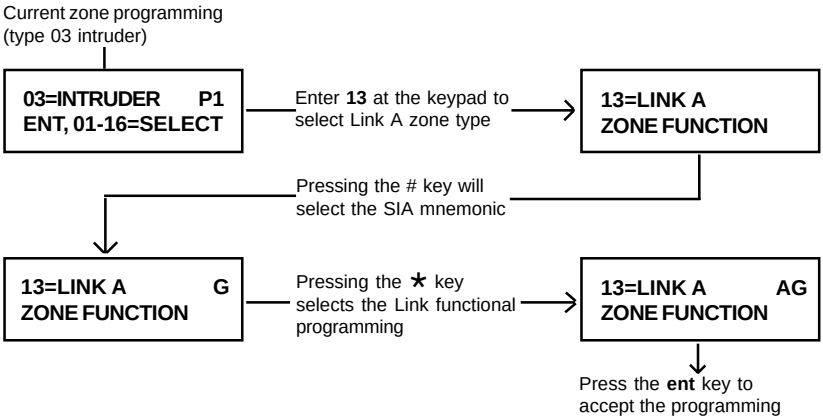


Figure 5.13 Link Zone Programming.

14 Link B

The Link B zone type is an engineer defined zone type. The programming of the Link B zone type is the same as for the Link A zone type; the only difference is the choice of SIA mnemonics available, these are listed in Table 5.13.

Link B SIA	SIA Codes	Meaning
None	RO/RC	Relay Open/Relay Close
S	SA/SR	Sprinkler Alarm/Sprinkler Restore
W	WA/WR	Water Alarm/Water Restore
Z	ZA/ZR	Freezer Alarm/Freezer Restore

Table 5.13 Link B SIA Mnemonic Programming Options.

Zones and Soak Test

Each of the zones on the system may be placed on a Soak Test to facilitate the detection of intermittent zone faults. Once a zone is placed on Soak test it does not activate an alarm during a system set but records in the event log.

To place a zone on Soak test enter menu option 7 Zones, use the A or B key to scroll through the zones and press ent to select the zone to be put on test.

Once the zone has been selected press the * key to put the zone on test, 14 appears on the display to indicate, in days, how long the test has to run. Press ent to accept or esc to cancel.

Notes: Placing a zone on Soak test resets the test time on any zones already on test back to 14 days.

Taking a zone off Soak Test resets all other zones on test back to 14 days.

Activation of a soak zone resets the soak time on all zones to 14 days.

Final and Spare zones are not tested by the Soak test.

Options 8 – Outputs

This option is used by the engineer to modify the programming of the outputs on the system. The available output default functions are shown in Table 5.14.

Output	Default Function	Programmable
	Bells	×
	Strobe	×
	Horn	×
1	Fire	✓
2	PA	✓
3	Intruder	✓
4	Set	✓
5 (optional)	Fire	✓
6 (optional)	PA	✓
7 (optional)	Intruder	✓
8 (optional)	Set	✓

Table 5.14 Galaxy 16/16 plus Output Defaults.

The Galaxy 16 and 16 *plus* have three fixed non-programmable and four programmable on-board outputs with the option of an additional four programmable outputs on a single optional Remote Input Output (RIO) Module or Galaxy Smart PSU, refer to Table 5.14 and to Section 2: SYSTEM ARCHITECTURE for details.

Modifying Outputs

When the Outputs option is selected, the function of output 1 is displayed. Press the ent key to select this output or press the A or B key to move to the required output and then press the ent key. The output function number and description are displayed. Press the A or B key to view the available output types. Pressing the appropriate number keys directly selects the corresponding output or output type.

When the desired output type is displayed press the ent key to reprogram the output. To exit this menu option without modifying the programming press the esc key.

To exit from the Output option press the esc key.

Table 5.15 shows the outputs that are activated by each of the zone types.

O/P	O/P Func	Activated By Zone Type									
		Final	Ex/Ent	Intr.	Fire	PA	PA Sil	Dual	Sec.	Lk A	Lk B
1	Fire				✓†						
2	PA					✓†	✓†				
3	Intruder		✓	✓		✓†		✓	✓		
4	Set										
5	Bells		✓	✓	✓†	✓†		✓	✓		
6	Strobe		✓	✓	✓†	✓†		✓	✓		
7	Switch dc										
8	Security								✓†		
9	Confirm		✓	✓				✓	✓		
10	Horn	✓	✓	✓	✓†	✓†		✓	✓†		
11	Medical‡										
12	AC fail										
13	Link A									✓	
14	Link B										✓
15	Batt Low										
16	Tamper										
17	Omit										

† Output activated in Set and Unset state.
‡ Output only activated by ✶5 keys, see Table 3.3 Star (✶) Key Combinations.

Table 5.15 Output Functions (and Activating Zones).

Output Types

1 Fire

The Fire output type is instantly activated by Fire zones in the set and unset state. The output latches on until a valid code is entered. The Fire output is not subject to Re-arm or Bell Delay.

2 PA

The PA output type is activated by PA and PA Silent zones and the ✶2 (PA Silent) code in the set and unset state. It also activated by entry of the User 13 code if the User 13 Duress parameter is enabled, see Section 5: MENU OPTIONS; Option 6 – Parameters; 06 User Options; 14 Usr 13 Duress. The output remains latched until reset with a code authorised for PA Reset, refer to Section 5: MENU OPTIONS; Option 4 – Codes and Option 6 – Parameters; 07 Reset. The PA output is not subject to Re-arm or Bell Delay.

3 Intruder

The Intruder output type is activated in an intruder alarm condition when the system is Full Set. An intruder alarm condition occurs if any of the following zone types are activated when the system is full set: Exit/Entry, Intruder, PA or Security zones. The intruder output activates in the Part Set state if the Part Intruder parameter is enabled, see Section 5: MENU OPTIONS; 6 – Parameters; 06 User Options; 04 Part Intruder.

In addition activation of a PA zone when the system is unset or part set causes the Intruder outputs to activate. Two Dual zone activations will also cause the Intruder outputs to activate when the system is full set. For details on Dual Zones see Section 5: MENU OPTIONS; Option 7: Zones; Zone Functions and for details on full sets and part sets see Section 4: SETTING OPTIONS.

When activated, the output latches on until a code authorised for Intruder Reset is entered, refer to Section 5: MENU OPTIONS; Option 4: Codes and Option 6: Parameters; 7 Reset.

The Intruder output is not subject to Re-arm or Bell Delay.

By default the Intruder output is not activated on a part set system. For Intruder output activation when the system is part set enable the Part Intruder option. See Section 5: MENU OPTIONS; Option 6: Parameters; 6 User options; 4 Part Intruder.

4 Set

The Set output type is a reflex output activated when the system is full set.

The Set output does not, by default, activate when the system is part set. To activate the Set output during a part set the part set attribute must be enabled, see Section 5: MENU OPTIONS: Option 6 – Parameters; 06 User Options; 08 Part Set.

5 Bells

The Bells output type is activated in a full alarm condition, it is subject to Bell Time, Bell Delay and re-arm, for programming details see Section 5: MENU OPTIONS; Option 6 – Parameters.

To prevent the Bells outputs from activating when the system is part set the Part Bells option must be disabled (enabled by default), see Section 5: MENU OPTIONS; Option 6 Parameters; 6 User Options; 3 Part Bells.

6 Strobe

The Strobe output type is activated in a full alarm condition, it is subject to Bell Time, Bell Delay and Re-arm parameters, for programming details see Section 5: MENU OPTIONS; Option 6: Parameters. The Strobe output type can be disabled from re-arm allowing it to operate continuously following a full alarm condition.

To prevent Strobe outputs from activating when the system is Part Set the Part Bells option must be disabled (enabled by default), see Section 5: MENU OPTIONS; Option 6: Parameters; 6 User Options; 3 Part Bells.

7 Switch DC

The Switch DC output type is not activated by any zone types or alarm conditions. It is used to power detectors that require a momentary power interruption to reset them when the system is setting — for example, break-glass detectors and vibration detectors). The Switch DC is a 0 V output that pulses to +12 V for two seconds when the (Full or Part) setting procedure is initiated and then returns to 0V.

8 Security

The Security output type is instantly activated by the opening of Security zones in a set or unset state. The output latches on until a valid code is entered. The Security output is not subject to Re-arm or Bell Delay.

9 Confirm

The Confirm output type is used to give confirmation of an Intruder type alarm. The Confirm output is only triggered by the following zone types: Exit/Entry, Intruder, Dual and Security. After the first activation of one of these zone types the Intruder outputs will activate; following this another activation of one of these zone types (on a different zone) will cause the Confirm output to activate.

10 Horn

The Horn output type is activated by any event that activates the keypad horn, that is: keypad zone chimes, see OPTION 2: CHIME; Medical alarms, see Section 3: GALAXY KEYPADS; Keypad Operation; Star Key; activation of any of the following zone types Intruder, Fire, PA, Dual, Security, also Final and Exit/Entry zone types (activating Exit Time and Entry Time countdowns respectively).

11 Medical

The Medical output type is activated by holding down the Star (*) and 5 keys on the keypad to cause a Medical alarm. Once the Medical output has been activated the word MEDICAL appears on the keypad display until one of the buttons on the keypad is pressed to acknowledge the alarm. A valid User Code or the Engineer Code must be entered to cancel the alarm. For more information on the star key functions see Section 3: GALAXY KEYPADS; Keypad Operation; Star Key.

The Medical output is also activated by the activation of a Link A zone type that has been assigned the Medical (M) SIA mnemonic.

12 AC Fail

The AC Fail output type is activated in the event of a mains power failure. It is restored to the de-active state when the a.c. mains supply returns.

13 Link A

The Link A output type is activated when a zone of type Link A is open. For more information see Option 7 – Zones; 13 Link A and Table 5.12 Link A and B Functional Programming Options.

14 Link B

The Link B output type is activated when a zone of type Link B is open. For more information see Option 7 – Zones; 14 Link B and Table 5.12 Link A and B Functional Programming Options.

15 Batt Low

The Batt Low output type is activated in the event of a stand-by battery power failure. It is restored to the de-active state when the stand-by battery power returns.

16 Tamper

The Tamper output type is activated in the event of a module tamper alarm or a Bell Tamper alarm. For information on module tamper alarms see Section 2: OPTIONAL MODULES.

17 Zone Omit

The Omit output type is activated anytime a zone is omitted form the system, either manually or force omitted at rearm.

Option 9 – Log

The Galaxy 16 and 16 *plus* provide a 250 event Log stored in the Non-Volatile Memory (NVM) chip. The Event Log can be viewed using the keypad or by using the Print menu option.

This option can only be accessed by the Engineer Code (Usr 15) and the Manager Code (Usr 14).

Viewing the Event Log from a Keypad

Once the Log option has been selected, the current date is displayed. Press the A key to move from the first event back through the log (event 001, 250, 249...), or the B key to move from the first event forward through the log (event 001, 002, ...250). Continued pressing of these keys allows each of the events stored in the log to be viewed.

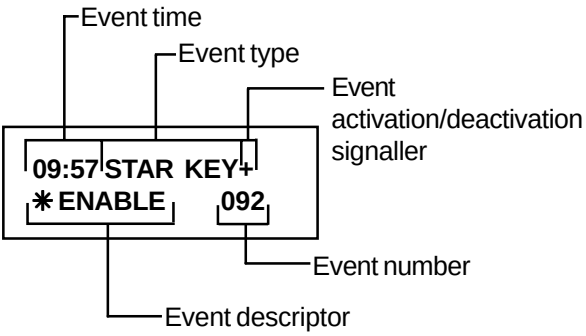


Figure 5.14 Event Log Entries.

Each time a new day is accessed the date and the next event number are displayed, pressing the A or B key will move the display to the next log entry. To display the date of the event currently displayed press the # key. Press the # key again to return to the event details. To quickly search the log for a specific event number enter a three digit number — between 001 and 250 and press the A or B key. If the number corresponds to an event it is displayed. If no corresponding event number is found the system returns to the previously displayed event number.

Printing the Event Log

A print out of the Event Log can be obtained by connecting a serial printer, via a Printer Interface module or an RS232 module, to the AB line (line 1), refer to Section 2: Optional Modules; RS232 Interface Module and Printer Interface Module.

To print the Event Log enter a valid code at one the keypads then press the * and 5 keys simultaneously. The entire event log is printed.

Note: The keypad must have the Star Key features enabled, see Section 3: GALAXY KEYPADS; Keypad Operation; Star Key.

Event Log Details

Each log event gives details of the time (in hours and minutes), the event type, number and description and the event location (zone or user) number. Refer to Appendix C: EVENT LOG MESSAGES for an explanation of each of the log messages.

To exit from the Log option, press the esc key.

Option 10 – Time

This option is used to set the time, date, and the start and end of Summer time. Both the manager and engineer have access to this menu option. The manager can only select this option by using menu driven access, see Section 5: MENU OPTIONS; MENU ACCESS; MENU DRIVEN ACCESS.

Option No.	Option	Default	Enter
1	Time	00:00	(hh:mm)
2	Date	01/01/94	(dd/mm/yy)
3	Start Summer	21/03	(dd/mm)
4	End Summer	27/10	(dd/mm)

Table 5.16 Time Options.

When the Time option is selected, OPTION 1 TIME is displayed. Press the ent key to select this option or the A or B key to move to the required option and press the ent key. Enter the time or date as required, the entry is permitted only if the values are valid times or dates, see Table 5.16 Time Options; for example, 33 is not accepted as a valid date for the day section of the date. Once the time or date is entered, press the ent key to accept the programming or esc to cancel. Use the A or B key to select another option.

Note: On entering a valid date in the 2 Date option the keypad briefly displays an abbreviated text of the day.

To exit from the Time option press the esc key.

Summer Time

The Summer options operate as an automatic adjustment for British Summer Time (BST). At 01:00 a.m. on the Start Summer date the system clock advances by one hour to 02.00 a.m. At 02.00 a.m. on the End Summer date the system clock put back by one hour to 01.00 a.m.

Option 11 – Text

This option is used by the engineer to assign a descriptor — of up to 16 alphanumeric characters — to the zones on the system.

When the Text option is selected, ZONE 1 is displayed, along with its current descriptor. Press the ent key to select this zone or the A or B key to move to the required zone and press the ent key.

Note: Pressing the appropriate number keys directly selects the zone.

The current descriptor of the selected zone is displayed on the top line of the keypad and a section of the alphabet and numbers 7, 8 and 9 are displayed on the bottom line.

Figure 5.15 Programming Text.

The # key is used to toggle between the lower case alphanumeric characters, upper case alphanumeric characters and library text. Refer to APPENDIX A: LIBRARY.

Note: On software versions V2.xx the Library has been removed from the Galaxy 16 *plus*, all text must be entered character by character. The Galaxy 16 retains its Library.

Section 6: COMMUNICATIONS MENU OPTIONS

Option 12 – Communications 1 (16 *plus* only)

The Galaxy 16 *plus* has an on-board 8 channel communicator capable of transmitting DTMF, SIA level 1 and Microtech format alarm signals, the Galaxy 16 *plus* can also be fitted with a Plug-on-STU.

The Galaxy 16 *plus* Menu options 12 and 13 are used by the engineer to program the on-board communicator and the Plug-on-STU options. Programming for the on board dialler will have no effect on the Galaxy 16 panel.

All Galaxy panels and PSUs meet the requirements of approval number **NS/G/23/J/100003** for general safety of apparatus connected to certain telecommunications systems.

Engineer Test

Once the Account Number and Telephone Number 1 have been entered an Engineer Test (code 9) can be sent to the Monitoring Station to ensure that the station is receiving transmissions sent from the communicator. The Engineer Test is a star key option, (see Section 3: GALAXY KEYPADS; Keypad Operation; Star Key), enter the Engineer Code, press the ✶ and 9 keys simultaneously to activate the Engineer Test. The keypad displays the following message:

Figure 6.1 Engineer Test Display.

Note: The Engineer Test attempts to transmit once for each selection of the option. If the test is unsuccessful the communicator does not attempt to re–send. An unsuccessful transmission is not counted as a Fail To Communicate.

BT Answer Service Dial Tone Detect

The Galaxy 16 *plus* now recognises an additional type of dial tone. This is to allow the Galaxy 16 *plus* to operate on lines where the British Telecom Answering Service may be in use. If a message has been left on the line an interrupted dial tone (750 ms on, 750 ms off) is given to indicate this. The Galaxy 16 *plus* is now able to recognise this as a valid dial tone.

Menu Option	Selection	Selection		Default
COMMS1	1 = Account No.	4 digits (DTMF) 8 (SIA)		
	2 = Telephone No. 1	16 digits (max.)		
	3 = Telephone No. 2	16 digits (max.)		
	4 = Format	1 = DTMF		Default
		2 = SIA		
		3 = Microtech		
	5 = Receiver	1 = Single		Default
		2 = Dual		
		3 = Alternative		
	6 = Dial Type	0 = DTMF Dial		
		1 = Loop Disconnect		Default
	7 = Triggers	**DTMF (Default)**	**SIA**	**Default**
		1 = Not Used	1 = Fire	Disabled
		2 = Not Used	2 = PA	Disabled
		3 = Intruder	3 = Intruder	Enabled
		4 = Not Used	4 = Set/Unset	Disabled
		5 = Not Used	5 = Tamper	Disabled
		6 = Not Used	6 = Omit	Disabled
		7 = Not Used	7 = Zone Rest.	Disabled
		8 = Not Used	8 = Part Set/ Reset	Disabled
		For a list of available DTMF triggers see Table 6.2.		
	8 = Autotest	hr:min		24:00
	9 = Interval	00–24		00 hr
	10 = Access	0 = Off		
		1 = Direct		Default
		2 = Mgr. Authorise		
		3 = Call Back		
	11 = Remote Tel. No.			
	12 = Home1 (SIA 0)			
	13 = Home2 (M/tech)			
	14 = Home3 (Audible)			
	15 = Home4 (Audible)			

Table 6.1 Communications 1 Programming Options**.**

01 Account No.

This number should be unique to each control panel and is used to identify the site to the monitoring station, Alarm Receiving Centre, Galaxy Gold etc. A unique account number **must** be entered before the control panel can dial out – failure to program an Account number will result in a Comms Fail message when the panel attempts to dial. The number of digits in the Account number is dependant on the receiving equipment; it is usually eight for SIA format and four for DTMF format.

The B key can be used to erase an existing number. The whole number should be erased before a new one is entered.

02 Telephone Number 1

Telephone Number 1 **must** be entered if the digi is to be used. This is the main telephone number that the alarms are signalled to. Up to 16 digits may be entered, including control modifiers. The control modifiers are entered using the ✶ and # keys:

– Dial tone detect (wait for new dial tone). This displays as a #. Each dial tone detect lasts for 15 seconds. If a new dial tone is not detected in this time, then the dialling attempt is aborted. This is counted as a fail to communicate.

✶ – Pause (for two seconds before dialling the next digit). This displays as a ✳.

To programme the telephone number:

- Go to the 02= TEL NO.1 menu option.
- Press the ent key.
- Using the number keys on the keypad enter the telephone number, including any control modifiers.
- The B key can be used to erase an existing number.

Note: The whole number should be erased before a new one is entered.

03 Telephone Number 2

A second telephone number is available to support Dual and Alternative dialling to a second receiver. The programming is identical to Telephone Number 1.

04 Format

The communicator provides three formats of signalling, the format selection will affect both Telephone Number 1 and Telephone Number 2.

1. **DTMF** (Dual Tone Multiple Frequency)

   The DTMF is Fast Format. This format is accommodated by most Monitoring Stations.

2. **SIA 1**

   The SIA level 1 format is a protocol that transmits detailed point identification (Point ID) information to a SIA compatible receiver. The SIA level 1 format transmits alarm events, the activated zone number and the type of event. The SIA format is capable of transmitting over 27 different Galaxy event types.

3. **Microtech**

   Microtech format is a protocol that transmits detailed point identification (Point ID) information to a PC with Galaxy Alarm Monitoring installed. The menu structure and programming of the Microtech option are identical to the SIA option.

Note: When SIA 1 is selected, non alarm events are not transmitted while the panel is being remotely serviced by Galaxy Gold. This allows the system to be set, unset, or alarms cancelled, without the call being terminated.

05 Receiver

The transmission destination can be set to one of three modes:

1. **Single:**
   reports to the telephone number programmed in Telephone Number 1.
2. **Dual:**
   reports to both numbers programmed in Telephone Number 1 and Telephone Number 2. The alarm must be transmitted to both numbers.
3. **Alternative:**
   reports to Telephone Number 1 **or** Telephone Number 2. Each number is tried in sequence until the alarm is successfully transmitted. The alarm is only transmitted to one number.

06 Dial Type

The transmission mode can be selected from two types:

0. **DTMF Dial:**
   (also known as "Tone") this is much quicker at dialling than the Loop Disconnect option.
1. **Loop Disconnect:**

   (also known as "Rotary" or "Pulse") is universal, however, an increasing number of exchanges now provide the DTMF Dial option.

Note: Although this equipment can use either Loop Disc. or DTMF signalling only the performance of DTMF signalling is subject to regulatory requirements for correct operation. It is therefore recommended that the equipment is set to use DTMF signalling for access to public or private emergency services. DTMF signalling also provides faster call set up.

07 Triggers

This option is used to either program DTMF triggers or enable SIA triggers. DTMF or SIA is chosen from menu option 12 Communications 1; 4 Format, the default is DTMF.

When transmitting to an Alarm Receiving Centre (ARC) in DTMF format the Galaxy 16 *plus* is an eight channel communicator. The Triggers option allows triggers 1 to 8 to be programmed as required.

When transmitting to an ARC in SIA format the Galaxy 16 plus has eight triggers that can be enabled/disabled as required.

DTMF Triggers

All channels, with the exception of channel three, default to trigger 00-Not Used, channel three defaults to 03-Intruder. Each of the eight channels can be programmed to transmit one of the 17 possible DTMF triggers.

Trigger Type No.	Trigger Type
00	Not Used
01	Fire
02	PA
03	Intruder
04	Set
05	Bells
06	Strobe
07	Switch DC
08	Security
09	Confirm
10	Horn
11	Medical
12	AC Fail
13	Link A
14	Link B
15	Batt Low
16	Tamper
17	Omit

Table 6.2 DTMF Triggers.

Triggers assume the programmed functions of the corresponding outputs and can be enabled to transmit these functions to a Monitoring Station.

To programme a channel trigger:

- Go to the triggers option and press the ent key, the keypad display shows the first channel and its current trigger programming.
- If channel 1 is to be reprogrammed press ent; otherwise use the A or B key to view the other channels pressing ent to select the channel to be programmed.
- The display shows the channel's current trigger programming; use the A or B key to scroll through the available triggers or use the number keys to directly enter the Trigger Type No. For a list of the trigger types and their numbers see Table 6.2 DTMF Triggers.

- Once the trigger has been reprogrammed press ent to accept the programming or esc to cancel.
- The A or B key can now be used to view the other channels and their trigger programming, ent selects the currently displayed trigger for programming.
- When all triggers have been programmed press ent or esc to return to the triggers menu.

Figure 6.2 DTMF Trigger Programming gives an example of programming channel 4 with trigger 05 Bells.

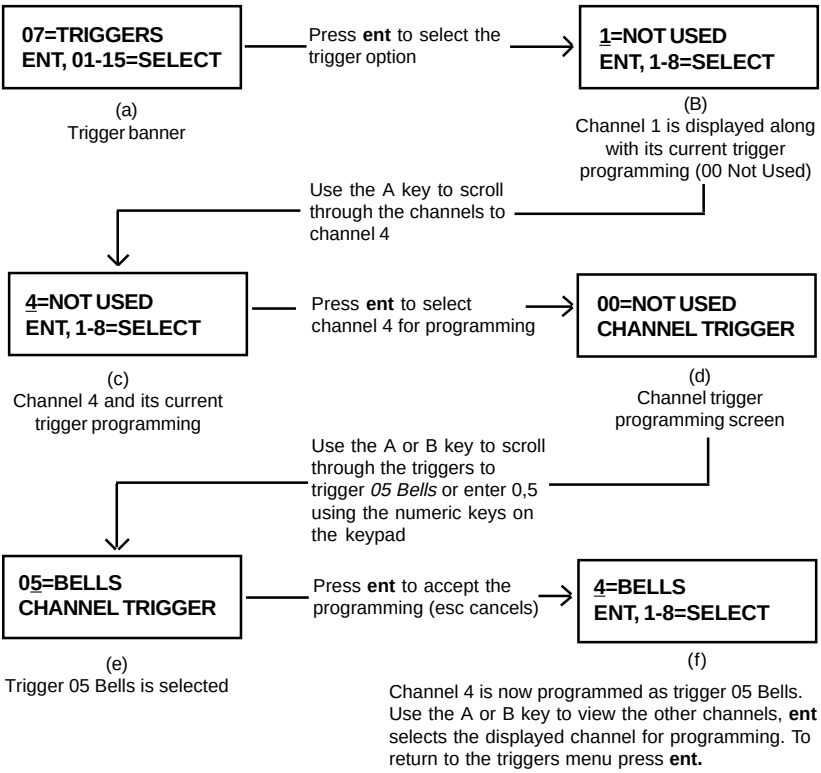

07=TRIGGERS
ENT, 01-15=SELECT
(a)
Trigger banner
Press ent to select the trigger option
1=NOT USED
ENT, 1-8=SELECT
(B)
Channel 1 is displayed along with its current trigger programming (00 Not Used)
Use the A key to scroll through the channels to channel 4
4=NOT USED
ENT, 1-8=SELECT
(c)
Channel 4 and its current trigger programming
Press ent to select channel 4 for programming
00=NOT USED
CHANNEL TRIGGER
(d)
Channel trigger programming screen
Use the A or B key to scroll through the triggers to trigger 05 Bells or enter 0,5 using the numeric keys on the keypad
05=BELLS
CHANNEL TRIGGER
(e)
Trigger 05 Bells is selected
Press ent to accept the programming (esc cancels)
4=BELLS
ENT, 1-8=SELECT
(f)
Channel 4 is now programmed as trigger 05 Bells. Use the A or B key to view the other channels, ent selects the displayed channel for programming. To return to the triggers menu press ent.

Figure 6.2 DTMF Trigger Programming.

SIA Triggers

The SIA triggers 1 – 8 are shown in Table 6.1 Communications 1 Programming Options. The system defaults to only trigger 3 (Intruder) enabled. Transition of SIA events is activated by entry of an event into the Galaxy 16 *plus* event log. For details on the Galaxy 16/16 *plus* Event Log see Section 5: MENU OPTIONS; Option 9 – Log.

To programme the SIA triggers:

- Go to the triggers option and press the ent key.
- Trigger 1 Fire is displayed. If the box on the top line of the keypad display is empty the trigger is disabled, if the box is filled the trigger is enabled.
- The # key toggles the enable status of the trigger.
- The A and B keys can be used to view the other triggers.
- Press ent to accept the programming or esc to cancel.

Figure 6.3 SIA Triggers Programming gives an example of programming the SIA triggers, it shows how to enable trigger 4 Set/Reset.

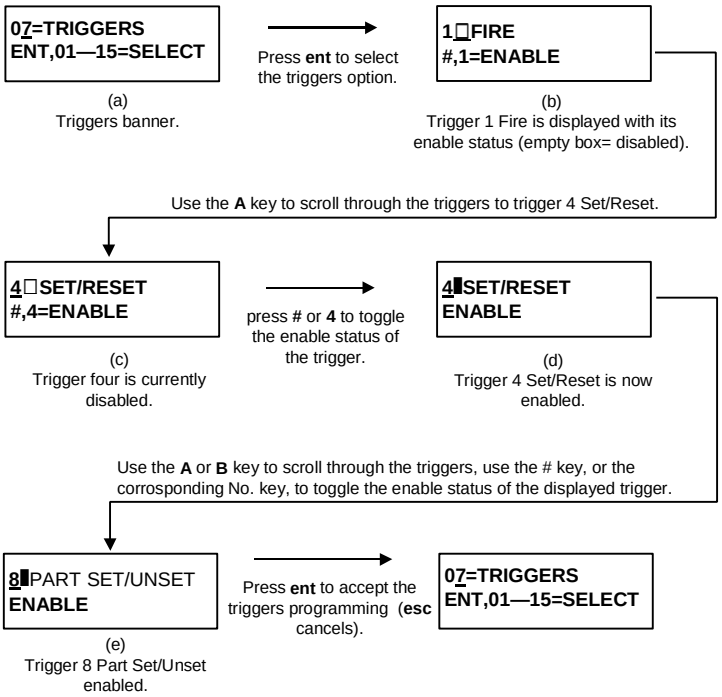


Figure 6.3 SIA Triggers Programming.

08 Autotest

An Engineer Test can be automatically transmitted to the Monitoring Station at programmed intervals. The engineer uses this option to enter the time that the first Engineer Test is transmitted. Subsequent Engineer Test transmissions are offset by the value in 09 Interval.

09 Interval

This option determines the period between Engineer Test transmissions following the time in 8 Autotest.

For example, Autotest = 01:00, Interval = 06. The first transmission of a test code is at 01:00 and is repeated every six hours.

Note: To disable Autotest enter 00:00 (default).

10 Access

The Galaxy 16 *plus* has an upload and download capability compatible with Galaxy Gold. Option 10 Access determines the type of access that is available via Galaxy Gold. There are four access options:

0 Off
Access to Galaxy 16 *plus* using Galaxy Gold is disabled.

1 Direct
This permits access at any time. Once access is authorised, uploading, downloading and remote servicing can begin.

2 Manager Authorise
There are two methods that the manager code (Usr 14) can use to enable access to the Galaxy 16 *plus*:

- Manager Code + ✶3 = Timed Access: Galaxy Gold must access the Galaxy 16 *plus* within 40 minutes of this option being enabled by the manager. Once connected, there is no time limit on the access period. On terminating the connection, Galaxy Gold can re-access the system within a 15 minute period of the termination unless the manager code toggles the ✶3 feature, for more information on star key features see Section 3: GALAXY KEYPADS; Star Key Features.
- Manager Code + ✶ent = Call Back: the manager instructs the Galaxy 16 *plus* to initiate a connection to a PC (with Galaxy Gold software loaded) by dialling the number programmed in menu option 11 Remote Telephone. For this option to function the Galaxy Gold software on the PC must be have the Connect\Wait for Call option selected – for more information see the **Galaxy Gold User Manual (L057)**.

Note: The star keys function must be enabled — refer to Section 3: Galaxy Keypads; Star Key.

3. Call Back
Galaxy Gold dials the Galaxy 16 *plus* and tells the panel to call Galaxy Gold back by dialling the number in menu option 11 Remote telephone, Galaxy Gold then hangs up and waits for the panel to dial it back. For this option to function the Galaxy Gold software on the PC must be have the Connect\Call Back option selected – for more information see the **Galaxy Gold User Manual (L057)**.

Notes: A telephone number must be entered in menu option 11 Remote Telephone when Manager Authorise (call back option) or Call Back is selected.

If Call Back is selected, then access to the Galaxy 16 *plus* is denied unless the call back option in Galaxy Gold is used to initiate the connection.

11 Remote Telephone

This is the telephone number that the Galaxy 16 *plus* calls when requested to initiate one of the call back access options.

12 – 15 Home Numbers

These menu options are used to provide multiple dialling options, or as a backup to the main telephone number(s) and format (menu options 12.2 Tel No. 1 to 12.4 Format). These options also allow multiple formats to be used with the Galaxy 16 *plus*. There are four Home Telephone number options; as many of these as are required can be used.

The main telephone numbers have the highest priority. Once the main telephone number(s)/format have finished dialling, or, if the main telephone numbers are unable to dial successfully, that is, a Fail To Communicate is recorded in the Event Log, then the Home telephone numbers will be tried.

The Home telephone numbers may also be tried if the programmed Home Triggers differ from the main format triggers, for example, if the main format is DTMF and the Home format is SIA and one of the selected Home triggers is Part Set/Unset the digi will not dial this out on the main format as there is no DTMF equivalent, so the Home Numbers will dial this information.

If there is a failure to dial to any of the Home telephone numbers then the main format and numbers are checked; depending on which triggers have been programmed for the main format there may be alarms pending. If alarms are pending and the panel has tried previously to dial and was unsuccessful, the number of attempts is reset to 0 and the main format number is redialled. When the main format number has been dialled successfully then the Home numbers will be retried. If the main format has no alarms pending then the Home numbers are retried.

12 Home1–SIA

To enable the SIA Home number option enter a telephone number into the menu option. The programming of the telephone number is identical to the programming of the main telephone numbers, see 12 Communications 1; 02 Telephone Number 1.

The triggers for Home1 are programmed from menu option 13 Communications 2; 6 Home1 Triggs.

13 Home2–Microtech

The operation of Home2–Microtech is the same as for Home1–SIA with the exception of the different transmission format.

To enable the Home2–Microtech triggers option enter a telephone number into this menu option.

The programming of the telephone number is identical to the programming of the main telephone numbers, see 12 Communications 1; 02 Telephone Number 1.

The triggers for Home1 are programmed from menu option 13 Communications 2; 7 Home2 Triggs.

14 Home3–Audible

The Audible alarms format will dial out an audible signal to the programmed telephone number. On answering the telephone a Pulsed Tone will be heard for Fire, PA, Intruder and Medical conditions. The different pulse times for each of these alarm conditions are given in Table 6.3 Audible Alarm Pulses.

Alarm	Tone On Time	Tone Off Time
Fire	1 second	1 second
PA	2 seconds	2 seconds
Intruder	4 seconds	4 seconds
Medical	8 seconds	8 seconds

Table 6.3 Audible Alarm Pulses.

The tones for each alarm condition will be pulsed for a total of 40 seconds.

To enable the Home3–Audible triggers option enter a telephone number into the menu option.

15 Home4–Audible

Home4–Audible acts as a backup to Home3–Audible. Its operation is the same as Home3–Audible.

To enable the Home 4 Audible triggers option enter a telephone number into the menu option.

Option 13 – Communications 2 (16 *plus* only)

This option is used to determine the communications parameters of the Galaxy 16 *plus*. The parameters are shown in Table 6.4 Communications 2 Programming Options. Options 4, 5, 8, 9, 10, 11, 12 and 13 are available on the Galaxy 16 panel with software version 2.7 and later.

Option		Selection	Default
1	No. of Rings	0 – 20	10
2	Line Fail	1 = Line Volts	Enabled
		2 = Dial Tone	Disabled
		3 = Pre–Dial Ring	Disabled
3	Fail To Communicate	0 – 5	3
4	STU Options	1 = Enable STU	Disabled
		2 = C/OP Reset	Enabled
		3 = C/OP Set/Unset	Disabled
		4 = C/OP Rem. Serv.	Disabled
		5 = Monitor STU LF	Disabled
		6 = Digi if STU Fail	Disabled
5	STU Triggers	1, 2, 4 – 6.	Disabled
		3 (Intruder)	Enabled
6	Home1 Triggers	1 = Fire	Disabled
		2 = PA	Disabled
		3 = Intruder	Enabled
		4 = Set/Unset	Disabled
		5 = Tamper	Disabled
		6 = Omit	Disabled
		7 = Link/Log	Disabled
		8 = Part Set/Unset	Disabled
7	Home2 Triggers	As for Home1 Triggers.	
8	Conf Aftr Ent	0 = okay to confirm	
		1 = never confirm	Enabled
9	Disable Kpads	0 = Never	
		1 = Entry Only	
		2 = Set or Entry	
10	ET Starts CT	0 = Off	
		1 = On	
11	Exit RT Conf	0 = Always	
		1 = Before Entry	
12	Repeat 1st ZN	0 = Leave Confirm	
		1 = Restart C/TIM	
13	RPRT	0 = Never	
		1 = Immediately	
		2 = At Ent/T/Out	

Table 6.4 Communications 2 Programming Options.

1 Number of Rings

This option determines the number of rings detected on the line before the on-board communicator answers.

2 Line Fail

The Galaxy 16 *plus* communicator continually monitors the telephone line that it is connected to. This option allows the engineer to determine the line monitoring conditions that result in a Line Fail event being reported and recorded in the log.

The three line monitoring capabilities are:

1. **Line Volts:**
   A line fail occurs if the voltage on the telephone line falls below three volts.
2. **Dial Tone:**
   A line fail occurs if the communicator cannot detect a dial tone on the telephone line.
3. **Pre Dial Ringing:**
   A line fail occurs if the communicator attempts to transmit an alarm while there is an incoming call.

When one of these conditions is detected, a Line Fail message is sent to the Galaxy 16 *plus* and is stored in the Event Log. If the system is unset, the TELECOM FAILURE message appears on the keypad display and a local alarm is sounded. If the system is set (Full or Part) when a line fail condition occurs, the message TELECOM FAILURE will be displayed when the system is unset, this will be accompanied by a local alarm.

The local alarm is only activated for the first line fail condition of each unset period. Subsequent line fails are displayed as TELECOM FAILURE messages on the keypad for the duration of the condition and are recorded in the event log.

If an alarm occurs during a Line Fail condition the Bell Delay is overridden.

Adaptive Timed Dialling (Blind Dialling)

On Activation of an alarm condition requiring to be signalled by the digi the panel snatches the line and checks for the presence of a dial tone. If the dial tone is not detected the dialling is initiated regardless.

If the Dial Tone Line Fail is enabled the line fault is indicated to the control panel and the Bell Delay parameter is overridden.

If the Dial Tone Line Fail is disabled the line fault is **not** indicated to the control panel and the Bell Delay parameter is **not** overriden. The Bell Delay parameter is not overriden until a Fail to Comm event is recorded in the event log.

For more information on Bell Delay see Section 5: MENU OPTIONS; Option 6 – Parameters; 08 Bell Delay.

For more information on Fail to Comm see 3 Fail to Communicate.

3 Fail to Communicate

This option determines the number of unsuccessful communications attempts before the COMM FAIL message is recorded in the event log.

Note: The number of dialling attempts to each telephone number is not affected by this option. The number of dialling attempts is non-programmable and is set to five.

When the Galaxy 16 *plus* dials it snatches the telephone line and dials the programmed telephone numbers. After a successful communication the LED lights for three seconds, the communicator releases the telephone line and reconnects any serially connected equipment. This procedure is repeated for the second telephone number if the Receiver menu option has been programmed as Dual.

Note: The Galaxy 16 *plus* communicator snatches and holds the line until a successful attempt has been made to the required telephone numbers or all five attempts to each number have been tried.

If the communication attempt is unsuccessful, the LED flashes rapidly for three seconds. The communicator then waits for a short period before redialling the number (or the second telephone number if the Receiver option has been programmed as Dual or Alternative). If the Fail To Communicate option is left at the default setting of three and the first three dialling attempts are unsuccessful the Comm Fail message is recorded in the event log.

The panel then tries another two times, if the next two attempts (five attempts in total) are unsuccessful, the alarms to be transmitted are erased from the buffer. This conforms with the repeat attempts procedure as detailed in the **BABT requirements BS6789, 1985, Section 3-1, Paragraph 7**.

Note: If the Receiver option is programmed as Dual (refer to Option 12 Communications 1; 5 Receiver; 2 Dual) then a successful transmission must be made to both telephone numbers. Five unsuccessful attempts to a single telephone number prevents the communicator from transmitting any alarm events for two hours.

This option has a programmable range of 00 to 20. Setting the value to 00 disables the Fail to Comm, that is no event is recorded in the log. The number of attempts made is always five therefore if Fail to Comms is programmed with a value higher than five the comms failure is not recorded in the event log.

4 STU Options

If a Plug-on Subscriber Terminal Unit (3GSTU-PLI) is to be connected to a Galaxy 16 *plus* (or Galaxy 16 with software V2.7 or later) then the Enable STU option must be enabled. This allows the Control Output functions and STU Line-Fail options on the Header pins to be programmed. The STU options need not be enabled for 12 V (Non-plug on) STUs.

1 Enable STU

If a plug-on Subscriber Terminal Unit (3GSTU-PLI) is to be fitted to the Galaxy 16 *plus* then the STU option must be enabled.

To enable the STU option press the # key (the top line of the keypad should read 1▮ENABLE STU), press the ent key to accept, or esc to cancel.

2 C/OP–Reset

There are three Control Output options on the Galaxy 16 *plus*: Reset, Set/Unset and Remote Servicing. It is strongly recommended that only one of these options is enabled on a Galaxy 16 *plus* control panel at a time. See also 3 C/OP SET/UNSET and 4 C/OP-REM.SERV.

The Control Output Reset option, when enabled, allows the Galaxy system to be reset after Intruder alarms by the central station.

To enable the C/OP-Reset option press the # key until the top line of the keypad display reads 2▮C/OP-RESET, press the ent key to accept. To disable the C/OP-Reset option press the # key (the top line of the keypad display should read 2□C/OP-RESET), press ent to accept.

3 C/OP Set/Unset

The Control Output Reset option, when enabled, allows the Galaxy system to be Set/Unset by the central station.

To enable the C/OP-Set/Unset option press the # key until the top line of the keypad display reads 3▮C/OP-RESET, press the ent key to accept. To disable the C/OP–Set/Unset option press the # key until the top line of the keypad display reads 3˜C/OP-Set/Unset, press ent to accept.

Note: It is strongly recommended that only one of the Control Output options is enabled on a Galaxy 16 *plus* control panel at a time.

4 C/OP–Rem.Serv

The Control Output Remote Servicing option, when enabled, allows remote servicing.

The C/OP–Rem.Serv option overrides the other remote servicing options in menu option 13.10 Access.

To enable the C/OP–Rem.Serv option press the # key until the top line of the keypad display reads 4▮C/OP-Rem.Serv, press the ent key to accept. To disable the C/OP–Rem.Serv option press the # key until the top line of the keypad display reads 4□C/OP-Rem.Serv, press ent to accept.

Note: It is strongly recommended that only one of the Control Output options is enabled on a Galaxy 16 *plus* control panel at a time.

5 Monitor STU LF

This option, when enabled, will monitor pin 15 on the Header pins for activation of the 3GSTU–PLI Line Fail output. It also enables monitoring of the Line-Fail zone input terminal. Activation of this input to the control panel will cause the Galaxy 16 *plus* Intruder outputs to activate.

6 Digi if STU Fail

This option, when enabled, will cause the on–board telecom module (digi) to dial the programmed Telephone No with a Tamper (LT/LR – Line Trouble/Line Restore) signal in the event of a line fail on the 3GSTU–PLI's phone line. This option will only work if menu option 12.04 Format has been programmed as SIA, the Tamper trigger in menu option 12.07 Triggers must also be enabled.

5 STU Triggers

The STU triggers option is used to assign triggers to the six alarm inputs on the 3GST–PLI. Triggers one to six activate Galaxy 16 *plus* output pins one to five and sixteen respectively. The available triggers are shown in Table 6.5 STU Triggers.

On selecting menu option 5 STU Triggers trigger 1 is displayed. To programme this trigger press the ent. Enter the two digit trigger number corresponding to the trigger type required, see Table 6.5 STU Triggers. Press the ent key to accept or esc to cancel. Use the A, B and ent keys to view and select other triggers.

Trigger No.	Trigger Type
00	Not Used
01	Fire
02	PA
03	Intruder
04	Set
05	Bells
06	Strobe
07	Switch DC
08	Security
09	Confirm
10	Horn
11	Medical
12	AC Fail
13	Link A
14	Link B
15	Batt Low
16	Tamper
17	Omit

Table 6.5 STU Triggers.

Trigger No.	Trigger Type
1	Fire
2	PA
3	Intruder
4	Set/Unset
5	Tamper
6	Omit
7	Link/Log
8	Part Set/Unset

Table 6.6 Home 1 and Home 2 Triggers**.**

6 Home 1 Triggs

The Home 1 Trigs option is used to assign the triggers for menu option 12.12 Call Home 1. The available triggers are outlined in Table 6.6 Home 1 and Home 2 Triggers. By default only Trigger 3 Intruder is enabled.

On selecting the Home 1 Triggs the first trigger (Fire) is displayed. The other triggers can be viewed using the A or B keys. To toggle the enable status of each trigger press the # key.

Press the ent key to accept the programming or esc to cancel.

7 Home 2 Triggs

The Home 2 Trigs option is used to assign the triggers for menu option 12.13 Call Home 2. The available triggers are outlined in Table 6.6 Home 1 and Home 2 Triggers. By default only Trigger 3 Intruder is enabled.

The programming for Home 2 Triggs is the same as for Home 1 Triggs.

8 Conf Aftr Ent

This option determines if confirmed alarms can be signalled after the start of an entry procedure.

9 Disable Kpads

This option determines whether keypad unsetting is permissable (required for fob controlled installations).

The keypads will be able to function normally during set and entry, regardless of this option, for part sets in which intruder alarms are not reportable.

0 Never

The keypad is always active

1 Entry Only

The keypad will not unset during the entry time only

Set or Entry

Keypads will be disabled when the panel is set, including entry time.

10 ET Starts CT

This option enables or disables Timeouts alarms from starting the confirmed alarms.

11 Exit RT Conf

This option determines if EXIT type zones can contribute to confirmed alarms.

1 Always

They will contribute anytime they are activated in an alarm condition (except during an entry).

2 Before Entry

They can only contribute before entry timer has been started (i.e. they will not contribute even after the entry time has expired.

12 Repeat 1st ZN

This allows the confirm timer to be restarted, if the same zone is activated again during the confirm time, and a confirmed alarm has not yet occured.

1 Leave Confirm

Confirm timer is not started

2 Restart C/Tim

Confirm timer is restarted upon repeated activation of the first to alarm zone.

13 Rprt Ent Alrm

This option determines if entry deviation alarms are to be signalled as unconfirmed alarms.

1 Never

The Timeout alarm will be the first alarm to be signalled.

2 Immediately

Entry deviation alarms will be signalled as unconfirmed alarms immediately.

3 At Ent T/Out

Entry deviation alarms will be stored and signalled when the entry timeout occurs, immediately before the Entry Timeout report.

APPENDIX A: SYSTEM MODULES AND PART NUMBERS

Product	Part No.
Galaxy 16 (requires keypad)	CP161
Galaxy 16 pack (with keypad)	CP163
Galaxy 16 *plus* (requires keypad)	CP171
Galaxy 16 *plus* pack (with keypad)	CP173
Galaxy Mk III LCD keypad	CP023
Galaxy RIO module	C058
RS232 Module	
Boxed	E054
PCB	A169
Printer Interface module	
6 pin DIN	A134
25 way D type	A161
Engineer keypad cable	A136
Screened twisted pair (2 pair) cable (Belden equivalent 8723)	W002
Power supplies (boxed)	
1 A	P019
3 A	P017
3 A Smart	P015

APPENDIX B: LIBRARY (GALAXY 16 ONLY)

No	Word	No	Word	No	Word	No	Word
01	ABOVE	26	COMPUTER	51	HALL	76	SAFE
02	ACCOUNTANT	27	CONFERENCE	52	INFANTS	77	SALES
03	ADMIN.	28	CORNER	53	KITCHEN	78	SECRETARY
04	ALARM	29	CUPBOARD	54	LADIES	79	SECURITY
05	ALERT	30	DEPT	55	LANDING	80	SHOP
06	ANNEXE	31	DETECTOR	56	LIBRARY	81	SHOWROOM
07	AREA	32	DINING	57	LOUNGE	82	SHUTTER
08	ASSEMBLY	33	DIRECTORS	58	MAIN	83	SIDE
09	ASSISTANT	34	DISPATCH	59	MANAGERS	84	SITTING
10	ATTIC	35	DOOR	60	MASTER	85	SLIDING
11	BACK	36	DOWNSTAIRS	61	MIDDLE	86	SMOKE
12	BALCONY	37	ELECTRONICS	62	NIGHT	87	STAFF
13	BASEMENT	38	EMERGENCY	63	NURSERY	88	STAIRS
14	BATHROOM	39	ENTRANCE	64	PATIO	89	STORE
15	BEDROOM	40	EXIT	65	PIR	90	STUDY
16	BLOCK	41	EXTERNAL	66	PLANT	91	SURGERY
17	BOILER	42	FACTORY	67	POOL	92	TELLER
18	BOTTOM	43	FEMALE	68	POWER	93	TOILET
19	BUILDING	44	FIRE	69	PRODUCTION	94	TRADE
20	CANTEEN	45	FLOOR	70	PUBLIC	95	TRAINING
21	CASHIER	46	FREEZER	71	REAR	96	TRANSPORT
22	CELLAR	47	FRONT	72	RECEPTION	97	UTILITY
23	CHANGING	48	GARAGE	73	ROLLER	98	WALL
24	CLEANERS	49	GENTS	74	ROOF	99	WINDOW
25	CLERKS	50	GOODS	75	ROOM	100	ZONE

APPENDIX C: EVENT LOG MESSAGES

Event Type	Descriptor	Location	Event Log Explnation
ADDED	KEYPAD 0	+	Keypad 0 added to system.
ADDED	KEYPAD 0	–	Keypad 0 removed from system.
ADDED	KEYPAD 1	+	Keypad 1 added to system.
ADDED	KEYPAD 1	–	Keypad 1 removed from system.
ADDED	KEYPAD 2	+	Keypad 2 added to system.
ADDED	KEYPAD 2	–	Keypad 2 removed from system.
ADDED	KEYPAD 13	+	RS232 module added to system.
ADDED	KEYPAD 13	–	RS232 module removed from system.
ADDED	KEYPAD 14	+	Telecoms module added to system.
ADDED	KEYPAD 14	–	Telecoms module removed from system.
ADDED	RIO	+	RIO added to system.
ADDED	RIO	–	RIO removed from system.
ADDED	PRINTER	+	Printer Interface module added to system.
ADDED	PRINTER	–	Printer Interface removed from system.
ADDED	RS232	+	RS232 module added to system.
ADDED	RS232	–	RS232 module removed from system.
ADDED	TELECOM	+	Telecom module added to system.
ADDED	TELECOM	–	Telecom module removed from system.
CANCEL	USR1-13, KEYSW 1-3, MGR, ENG	<Usr No>	Alarm cancelled by <User No.>.
CODE	USR1-13	+<Usr No>	Code with no Set, Unset or Reset attributes enabled entered at keypad.
DUAL	Zone Descriptor	+<Zone No>	<Zone No.> of type Dual activated.
DUAL†	Zone Descriptor	–<Zone No>	<Zone No.> of type Dual restored.
† Only logged when Zone Restoral is enabled for SIA triggers.			

Event Log Messages (cont'd)

Event Type	Descriptor	Location	Event Log Explnation
ENG MODE		+	Engineer Mode accessed.
ENG MODE		–	Engineer Mode Accessed.
Entry	Zone Descriptor	+<Zone No>	<Zone No.> of type Entry activated.
Entry	Zone Descriptor	–<Zone No>	<Zone No.> of type Entry restored.
EXIT/ENT	Zone Descriptor	+<Zone No>	<Zone No.> of type Exit/Entry activated.
EXIT/ENT	Zone Descriptor	–<Zone No>	<Zone No.> of type Exit/Entry restored.
FINAL	Zone Descriptor	+<Zone No>	<Zone No.> of type Final activated.
FINAL	Zone Descriptor	–<Zone No>	<Zone No.> of type Final restored.
FIRE	Zone Descriptor	+<Zone No.>	<Zone No.> of type Fire activated.
FIRE†	Zone Descriptor	–<Zone No.>	<Zone No.> of type Fire restored.
FULL SET	USR1–13, KEYSW 1 –3, MGR, ENG,KEYPAD	<Usr No.>	Full set by <Usr No.>.
INTRUDER	Zone Descriptor	+<Zone No.>	<Zone No.> of type Intruder activated.
INTRUDER†	Zone Descriptor	–<Zone No.>	<Zone No.> of type Intruder restored.
KEYSWITCH	Zone Descriptor	+<Zone No.>	<Zone No.> of type Keyswitch activated.
KEYSWITCH	Zone Descriptor	-<Zone No.>	<Zone No.> of type Keyswitch restored.
LINK A	Zone Descriptor	+<Zone No.>	<Zone No.> of type Link A activated.
LINK B	Zone Descriptor	–<Zone No.>	<Zone No.> of type Link A restored.
MISSING	Keypad 0	+	Communication with Keypad 0 lost.
MISSING	Keypad 0	–	Communication with Keypad 0 restored.
MISSING	Keypad1	+	Communication with Keypad 1 lost.
MISSING	Keypad 1	–	Communication with Keypad 1 restored.
MISSING	Keypad 2	+	Communication with Keypad 2 lost.
MISSING	Keypad 2	–	Communication with Keypad 2 restored.
MISSING	Keypad 13	+	Communication with RS232 module lost.
MISSING	Keypad 13	–	Communication with RS232 module restored.

† Only logged when Zone Restoral is enabled for SIA triggers.

Event Type	Descriptor	Location	Event Log Explnation
MISSING	Keypad14	+	Communication with Telecoms module lost.
MISSING	Keypad14	–	Communication with Telecoms module restored.
MISSING	Printer	+	Communication with Printer Interface module lost.
MISSING	Printer	–	Communication with Printer Interface module restored.
MISSING	RIO	+	Communication with RIO lost.
MISSING	RIO	–	Communication with RIO restored.
MISSING	RS232	+	Communication with RS232 module lost.
MISSING	RS232	–	Communication with RS232 module restored.
MISSING	Telecom	+	Telecom module added to system.
MISSING	Telecom	–	Telecom module removed from system.
MENU	CHIME		Menu option 2 – Chime selected.
MENU	CODES		Menu option 4 – Codes selected.
MENU	COMMS 1		Menu option 12 – Communications 1 selected.
MENU	COMMS 2		Menu option 13 – Communications 2 selected.
MENU	Omit		Menu option 1 – Omit selected.
MENU	Outputs		Menu option 8 – Outputs selected.
MENU	Params		Menu option 6 – Parameters selected.
MENU	Test		Menu option 5 – Test selected.
MENU	Text		Menu option 11 – Text selected.
MENU	Time		Menu option 10 – Time selected.
MENU	Walk	+	Menu option 3 – Walk Test started.
MENU	Walk	–	Menu option 3 – Walk test ended.
MENU	Zones		Menu option 7 – Zones selected.
OMIT	Zone Descriptor	<Zone No.>	<Zone No.> omitted from system.

Event Log Messages (cont'd)

Event Type	Descriptor	Location	Event Log Explnation
PA	Zone Descriptor	+<Zone No>	<Zone No.> of type PA alarmed.
PA†	Zone Descriptor	–<Zone No>	<Zone No.> of type PA restored.
PA RESET	USR1–13, KEYSW 1 –3, MGR, ENG	<USR No>	System reset following PA activation by <Usr No.>
P1 SET	USR1–13, KEYSW 1 –3, MGR, ENG,KEYPAD	<USR No>	Part 1 set by <USR No.>
P2 SET	USR1–13, KEYSW 1 –3, MGR, ENG,KEYPAD	<USR No.>	Part 2 set by <USR No.>
P3 SET	USR1–13, KEYSW 1 –3, MGR, ENG,KEYPAD	<USR No.>	Part 3 set by <USR No.>
P1 UNSET	USR1–13, KEYSW 1 –3, MGR, ENG	<USR No.>	Part 1 unset by <USR No.>
P2 UNSET	USR1–13, KEYSW 1 –3, MGR, ENG	<USR No.>	Part 2 unset by <USR No.>
P3 UNSET	USR1–13, KEYSW 1 –3, MGR, ENG	<USR No.>	Part 3 unset by <USR No.>
PASILENT	Zone Descriptor	+<Zone No.>	<Zone No.> of type PA Silent activated.
PASILENT†	Zone Descriptor	–<Zone No.>	<Zone No.> of type PA Silent restored.
PRINTING	USR1–13, MGR, ENG	<USR No.>	Print-out of System or Log by <USR No>
PUSH SET	Zone Descriptor	+<Zone No.>	Push Set on <Zone No.> activated.
PUSH SET	Zone Descriptor	–<Zone No.>	Push Set on <Zone No.> restored.
REARM			System re-arm following alarm activation.
SECURITY	Zone Descriptor	+<Zone No.>	<Zone No.> of type Security activated.
SECURITY	Zone Descriptor	–<Zone No.>	<Zone No.> of type Security activated.
SOAK	Zone Descriptor	+<Zone No.>	<Zone No.> activated on Soak test.
SOAK	Zone Descriptor	–<Zone No.>	<Zone No.> restored on Soak test.
STAR KEY	∗ENABLE	+	Star key feature enabled.
STAR KEY	∗ENABLE	–	Star key features disabled.
STAR KEY	Backlight		Keypad backlighting toggled.
STAR KEY	Eng. Test		Engineer test sent.
† Only logged when Zone Restoral is enabled for SIA triggers.			

Event Type	Descriptor	Location	Event Log Explnation
STAR KEY	Fire		Fire alarm activated using ✶+8 keys.
STAR KEY	Medical		Medical alarm activated using ✶+5 keys.
STAR KEY	Mgr Auth		Remote servicing authorised.
STAR KEY	Call Back		Call back option accessed.
STAR KEY	PA		✶+2 keys activated PA Silent alarm.
STAR KEY	Print Log		Event Log printed.
STAR KEY	Print Sys		System details printed.
STAR KEY	Status		Zone status veiwed using ✶+# keys.
STAR KEY	Volume		Keypad volume toggled.
SYSRESET	USR1–13, KEYSW 1 –3, MGR, ENG	<USR No>	System reset after intruder alarm by <USR No.>.
SYSTEM	Auto Test		Auto-test dialled by Telecoms Module.
SYSTEM	Bell	+	SAB (Bell) tamper condition activated.
SYSTEM	Bell	–	SAB (Bell) tamper condition restored.
SYSTEM	Code	06	Keypad lockout (six invalid codes entered).
SYSTEM	Cold Start	10	System reset to defaults Cold Start.
SYSTEM	Comm Fail	14	Telecoms module failed to transmit alarm signals.
SYSTEM	Connect	11	Telecom module disconnected from remote servicing PC.
SYSTEM	Engineer	+	Engineer mode access tamper condition activated.
SYSTEM	Fire	+	Fire alarm activated by keys ✶+8.
SYSTEM	Fuse/DC Fail	+	Fuse blown or d.c. power failure.
SYSTEM	Fuse/DC Fail	–	Fuse replaced or d.c. power restored.
SYSTEM	LID	+	Lid tamper condition activated.
SYSTEM	LID	–	Lid tamper condition restored.
SYSTEM	Line Fail	+	Telecoms module disconnected from PSTN.
SYSTEM	Line Fail	–	Telecoms module reconnected to PSTN.

Event Log Messages (cont'd)

Event Type	Descriptor	Location	Event Log Explanation
SYSTEM	Log 90% Full		System event log 90% full.
SYSTEM	PA	+	PA Silent alarm activated by ✶+2 keys.
SYSTEM	Power	+	AC power failure occurred.
SYSTEM	Power	–	AC power restored.
SYSTEM	STU Fail		STU module disconnected from PSTN.
SYSTEM	Timeout	+	AC and d.c. power removed and then restored to system.
SYSTEM	Warm Start		Entry time expired before system was unset.
TAMP O/C	Zone Descriptor	+<Zone No>	Tamper Open Circuit on <Zone No.>.
TAMP O/C	Zone Descriptor	–<Zone No>	Tamper Open Circuit on <Zone No.>.
TAMP S/C	Zone Descriptor	+<Zone No>	Tamper Short Circuit on <Zone No.>.
TAMP S/C	Zone Descriptor	–<Zone No>	Tamper Short Circuit on <Zone No.>.
TAMP RST	USR1–13, KEYSW 1 –3, MGR, ENG	<USR No>	System reset following tamper condition by <USR No.>.
TAMPER	Keypad 0	+00	Tamper condition on Keypad 0 activated.
TAMPER	Keypad 0	–00	Tamper condition on Keypad 0 restored.
TAMPER	Keypad 1	+01	Tamper condition on Keypad 1 activated.
TAMPER	Keypad 1	–01	Tamper condition on Keypad 1 restored.
TAMPER	Keypad 2	+02	Tamper condition on Keypad 2 activated.
TAMPER	Keypad 2	–02	Tamper condition on Keypad 2 restored.
TAMPER	RIO	+05	Tamper condition on RIO activated.
TAMPER	RIO	–05	Tamper condition on RIO restored.
TAMPER	Printer	+06	Tamper condition on Printer Interface module activated
TAMPER	Printer	–06	Tamper condition on Printer Interface module restored.
TAMPER	RS232	+07	Tamper condition on RS232 activated.
TAMPER	RS232	–07	Tamper condition on RS232 restored.
TAMPER	Telecom	+08	Telecom module added to system.
TAMPER	Telecom	–08	Telecom module removed from system.

Event Type	Descriptor	Location	Event Log Explanation
UNSET	USR1–13, KEYSW 1 –3, MGR, ENG	<USR No.>	Full system unset.
WALKTEST	Zone Descriptor	<Zone No.>	<Zone No.> tested during WALK TEST option.

Ademco Microtech Ltd.
3 Wellington Crescent
Fradley Park
Lichfield
Staffs
WS13 8RZ
Adivision of the Pittway Corporation

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